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UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 861

Contribution from the Bureau of Markets
GEORGE LIVINGSTON, Chief

Washington, D. C. ▼ September 13, 1920

MARKETING EASTERN GRAPES

By

DUDLEY ALLEMAN, Assistant in Market Surveys

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THE changes brought about by recent legislation should not injure the grape industry of the North and East if the crop is handled in a careful and businesslike manner from the vineyard to the consumer.

The vineyardist should produce the varieties demanded by the trade in his section, should prepare his product for the market according to the most approved methods, and should choose his marketing agency with care.

The shipper should devote his attention to the intensive and extensive distribution of the crop with a view to supplying each chosen market with the variety and quantity in demand.

All city handlers should work for the quick movement of the grapes from car door to consumer and for the stimulation of the demand as supplies increase.

To aid each of these groups in solving the problems involved and to aid in preserving the profitable status of the grape industry is the purpose of this bulletin.

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INTRODUCTION.

There are three main types of grapes produced in the United States, the European or *vinifera* type, grown extensively in California, among the principal representatives of which are the Tokay, Malaga, and Emperor; the *labrusca* type, grown in practically all sections of the country, represented by the Concord, the Niagara, and the Catawba; and the Muscadine grapes, grown in the South Atlantic and Gulf States, of which the oldest and best known variety is the Scuppernong. This bulletin deals with the marketing of *labrusca* grapes, known commercially as Eastern grapes; the European or Western grape and the Muscadines present very different problems of production and use.

HISTORY OF VARIETAL DEVELOPMENT.

When the first colonists reached eastern America they found the native grapes growing luxuriantly. As early as 1616 Lord Delaware wrote to England, "In every boske and hedge we have thousands of goodly vines running along and cleaving to every tree." These flourishing native species of grapes encouraged the importation of the best English and French varieties, which were planted in great number from New England to Florida. All of these vines sickened and died, but apparently only those planters immediately

involved were discouraged, for others were always ready to attempt the precarious experiment, hoping to find some more favored spot where these varieties would thrive. Such attempts to grow *vinifera*, or Old World varieties, in the eastern part of the United States were continued over a hundred years, and thousands of dollars were lost in the futile experiments. They served only to prove conclusively that *vinifera* varieties would not grow successfully in the East.

In the early part of the nineteenth century the American grapes, species indigenous to this country, such as *labrusca*, *aestivalis*, *rotundifolia*, and *riparia*, were brought under cultivation. Because of their already established resistance to phylloxera, which prevents the growth of *vinifera* in the East, these varieties for the most part flourished and were relatively productive. Until 1830 the common cultural practice was to transplant and cultivate promising wild vines. By this time three important varieties had been developed, the Catawba, the Scuppernong, and the Isabella. The first two were widely grown in the South and the Middle West and the latter in the North.

Shortly after the middle of the nineteenth century two important developments gave a great impetus to the grape industry. The first and most important was the discovery and dissemination of the Concord; and second was the extensive hybridization of American and European varieties.

Up to this time the only aim of grape growers and breeders was to obtain stock suitable for the manufacture of wine, but following the introduction of the Concord and other varieties of high quality the production of table stock began to assume an increasingly greater relative importance in the East, until in recent years the consumption of grapes by wineries has been smaller than the amounts sold as table stock and for unfermented grape juice.

THE RISE AND FALL OF COMMERCIAL PRODUCTION.

The grape industry grew rapidly during the two decades prior to 1880, but it was in the decade after 1880 that the greatest expansion occurred. In some sections grape growing was found so profitable that it assumed speculative proportions and many vineyards were planted in sections which were totally unsuited to grape growing. The decade 1889–1899 was a period of readjustment, a reduction in acreage taking place throughout the South and the Middle West, but this decrease was more than offset by large plantings in New York. Hence, the Twelfth Census showed the production in 1899 as 18 per cent above that of 1889. The next 10 years, 1899–1909, showed an almost negligible increase in production, but the process of readjustment was continued.

The Thirteenth Census, taken in 1909, showed a still further relocation of production. The decrease in acreage and production in the South and the Middle West continued and was particularly marked in the southern and central parts of Ohio and Pennsylvania. During this period the industry assumed approximately the present areas of production. Michigan, and, to a much smaller extent, Delaware, Missouri, New Jersey, and North Carolina, advanced to the position they hold in the industry to-day, while New York's production was practically stationary.

No official data are available as to the acreage or production at the present time or the changes that have taken place since 1909, but it is safe to say that the commercial acreage has been materially reduced since that year. This reduction has been most marked in New York, Ohio, and in the Missouri Valley. Not only has the acreage diminished, but, in the opinion of well-informed growers and factors, the production per acre in the leading commercial sections is by no means equal to that of the early days of the twentieth century.

Table 1 shows the carlot shipments of Eastern grapes as reported to the Bureau of Markets by the various railroads on which the shipments originated, and incidentally it discloses the effect of the severe winter 1917–18 upon the commercial production.

TABLE 1.—*Carlot shipments of Eastern grapes for 1916, 1917, 1918, and 1919, as reported by originating railroads.*

State.	1916	1917	1918	1919	State.	1916	1917	1918	1919
Arkansas	15	8	9	16	North Carolina	13	0	0	0
Delaware	34	69	39	13	Ohio	258	215	54	108
Idaho	0	6	4	3	Oregon	0	2	3	4
Iowa	143	86	68	156	Pennsylvania	1,012	827	367	1,013
Kansas	30	39	14	33	Tennessee	1	0	0	0
Michigan	1,849	3,667	1,637	3,795	Virginia	2	0	0	0
Missouri	37	33	26	43	Washington	30	36	59	61
Nebraska	113	8	2	12					
New Jersey	5	4	1	0	Total	8,031	9,140	4,338	9,472
New York	4,489	4,140	2,055	4,215					

CHANGES IN MARKET OUTLETS.

Not only has the relative importance of various districts changed materially during the last two decades, but the purpose for which the grapes are used in the different sections has also undergone an evolution, gradual but none the less marked. It has been mentioned that toward the end of the nineteenth century the use of grapes for eating purposes—for table stock—began to surpass the amounts used for wine. This tendency continued until about 1907–8, when production became so plentiful that even a combination of good packing, low prices, and intensive distribution could hardly suffice to dispose of the crop as table stock. It was about this time that the manufacture of grape products began to assume an increasingly greater

importance. These new products—unfermented grape juice, champagne, and sweet wines manufactured in bonded wineries, and home-manufactured sour red wines—created three new market outlets. The first two of these grape products were made almost exclusively of local stock, that is, of grapes produced within hauling distance of the factories; but the third outlet was a proposition requiring bulk shipment with deliveries made either in trays or in 12-quart Climax baskets.

The peak of the shipments of table stock was reached between 1907 and 1911. After the latter date an increasingly large amount of stock was used annually for beverages. These new outlets increased the consumptive demand and made it easier to dispose of the crop, but incidentally resulted in the lowering of the standard of pack in several of the leading sections. So much less labor is required to prepare stock for pressing than for shipment as table stock that more and more stock went to juice factories, wineries, and in bulk to cities which contained a large foreign population.

PRESENT COMMERCIAL OUTLOOK.

Prohibition legislation gave rise to serious problems, by closing some of the important outlets hitherto used. The character of the grape industry is rapidly changing. Readjustments and changes in usual channels of trade are being abruptly forced on the growers between one season and another that in the usual course of commercial evolution would cover a period of years. The danger for the future lies in the possibility of the excess of supply over demand, but this can be minimized by utilizing to the utmost every available legal outlet.

The grape-juice industry is in a thriving condition and the demand for its products has not been adequately supplied in the last few years. The grape-juice factories can be relied on to absorb a fairly large proportion of the stock formerly used for wine.

The commercial manufacture of grape jellies, jams, and conserves which is being rapidly developed may create a demand even greater than the unfermented-juice industry, and, as it expands, will undoubtedly furnish an outlet for a very large tonnage.

The table-stock trade is also capable of expansion. This is especially true in New England, in the Middle Atlantic States, and in the South. The Middle West is probably adequately supplied with table stock by Michigan shippers, who have kept in touch with this class of trade much better than have the shippers of New York, Pennsylvania, and Ohio. The table of destinations, given in the appendix, shows the wide distribution of Michigan stock and the relatively narrower distribution of New York shipments.

COMMERCIAL VARIETIES.

As the grape industry of the East is founded upon the improved varieties developed during the nineteenth century, a short description of the characteristics of the leading varieties, from the commercial point of view, is here given since, of the 700 varieties recognized by pomologists, 7 constitute the great bulk of the production, only those 7 varieties are here described.

THE CONCORD.

The Concord is preeminently the leading commercial variety of the eastern United States. It is an interesting fact that the development of the commercial grape industry has gone hand in hand with the introduction of this variety in the section. The characteristics that have made the Concord the undisputed leader among varieties are its extreme hardiness and high productivity under a wide range of soil and climatic conditions. The large quantities of Concord grapes that have been disposed of commercially during the past two decades have created a demand for blue or black grapes on the part of the consuming public analagous to the favor in which the red varieties of apples are held.

The clear, red juice of the Concord makes it the leading variety for the manufacture of grape juice, and several of the factories which produce the highest quality of product refuse any other variety. Large quantities were formerly used for the manufacture of sweet red wines, to which it gave a bright ruby color, a fruity flavor, and a fine body. The Concord may not be held in high esteem by a few connoisseurs, but it is regarded as the standard variety by the general consuming public. It withstands diseases and insect attacks, produces good, close, fair-sized bunches of medium-sized berries, and has a most attractive color and bloom. Its only weakness is that it is not so good a shipper as some other varieties, as it rapidly loses its flavor after picking and the berries soon shell and crack.

Not only does the total commercial production of the Concord far exceed that of any other variety, but it is the leader in practically every grape-growing district north of the Potomac River and east of the Rockies, particularly in the Chautauqua-Erie belt of New York and Pennsylvania, where it occupies 95 per cent of the commercial acreage. In the South it is not so popular, for the berries ripen unevenly, but even there it finds some favor for home consumption.

Certain other varieties, notably the Niagara and the Delaware, often command a slight premium over the Concord, but this does not disprove the leadership of this great blue variety, as these other kinds meet a special and limited demand which can consume only a relatively small quantity of stock at premium prices.

THE NIAGARA.

The Niagara is the leading white variety, but does not find much favor outside of New York State, where it is a leader in the Lake Ontario district, a relatively unimportant section. It has never attained great commercial popularity, because its quality is not high, and because of the difficulties surrounding its culture. This variety is very weak in the root, is subject to insect attack and subsequent winter injury, does not mature its wood well, and is often badly affected by fungus diseases.

In appearance the Niagara is a very showy grape, with large, well-formed bunches. The skin does not crack easily, but the berries shell badly from the stem. It has to a marked degree the "foxy" taste so characteristic of the *labrusca* species, and for that reason finds high favor with a small part of the consuming public. This results in an active demand for small quantities of this variety, with usual price premiums over blue varieties, but if Niagaras appeared in the market in as large quantities as Concords, it is probable that the special demand would be oversupplied and the price decline lower than that held by standard blue grapes.

THE CATAWBA.

The Catawba is a red variety of high quality and attractiveness, and is probably the best keeper of the commercial grapes. It is widely distributed, being a leading grape in Ohio, New York, and the Southeast. The late ripening of this variety, with its susceptibility to early frosts, prevents its wider dissemination. In only two sections of the North are Catawbas planted extensively—the Erie shore of Ohio and the Central Lake district of New York. The variety is at its best in the latter section, particularly on the banks of Lake Keuka, on land extending back to an altitude of 100 feet above the surface of the lake. It is a very attractive grape, the bunches being large, even, and compact. Its quality is high, though often impaired by premature picking. In the past it has been largely used for wine, as it makes a good, light-colored vintage, which was often used as a basis for champagne. As a matter of fact, the American champagne industry was largely built upon this variety. Prohibition legislation released large quantities of Catawba stock hitherto used by wineries, but it is coming into favor for the manufacture of white grape juice, and much larger amounts than formerly will probably be consumed for this purpose.

As the Catawba is in only fair demand for table stock in most markets, and as the juice factories do not seem to be able to use all the stock formerly used for wine, this variety will probably appear

in greater supply on consuming markets in the coming years. This prospective increase in supply will probably eliminate the premium often received for this variety, but its many good qualities will undoubtedly soon create a demand that will prevent its price levels from dropping far below standard blue varieties, particularly late in the season, when demand has become well-established and supplies of other varieties are declining. Care should be taken by all interested in the handling of this variety not to hurt its popularity by shipping stock which has not fully matured. Generally speaking, the red varieties are relatively more popular in the South than they are in the northern markets.

The Catawba is one of the oldest commercial varieties, having been introduced and planted widely in the early part of the nineteenth century. Up to the time of the introduction of the Concord it was the leading commercial variety.

THE DELAWARE.

The Delaware is the standard of quality among the Eastern grapes. There is no variety even of the *vinifera* type of richer or more delicious flavor or with more agreeable bouquet than the Delaware. It flourishes under a wide range of soil and climatic conditions and finds favor throughout the eastern United States. Its wider commercial production has been prevented by its comparatively low yield, which is caused by the small size of the vine, slowness of growth, the small size of the berries, and the susceptibility of the foliage to mildew.

It is in active demand in leading terminal markets, generally commanding a marked premium over blue varieties. As this premium is not due to any special class demand, but rather to general excellence of the fruit of this variety, it is doubtful if larger supplies upon the market would greatly depress its relative price.

The Delaware is probably the most widely distributed of Eastern commercial varieties, as it finds favor in the Central Lakes and the Hudson River districts of New York, in Michigan, in Delaware, and is coming into commercial favor in the South as an early grape to ship to northern markets.

THE MOORE.

The variety known generally as the Moore is, in effect, an early Concord and is regarded in trade channels in that light. It resembles the Concord very closely, but the bunches are generally smaller, the individual berries larger, and the quality and texture not quite so good. It is not so hardy as the Concord and does not succeed on such a variety of soils, but it is a good keeper and shipper,

and having the advantage of ripening from two to three weeks before the Concord it may be regarded as a valuable commercial sort. Though less adaptable than the Concord in the matter of soils, it stands a much wider range of climatic conditions, thriving in New York, Michigan, the Missouri Valley, New Jersey, and the Southeast.

THE WORDEN.

The Worden is similar to the Moore in fruit characteristics, season, and soil requirements, and is rather more hardy and productive. If it were a better shipper it would probably largely replace that variety for the early trade. Its great drawback is tenderness of skin, which results in cracking and speedy deterioration. In addition, it ripens unevenly and sometimes two or three pickings are necessary for a high-class pack. Like the Moore, it grows well in New York, Michigan, the Missouri Valley, and the Southeast. Also like the Moore, it is regarded by the trade and by the consuming public as an early Concord. It is a valuable variety for local consumption and near-by shipment and finds some favor for grape-juice manufacture, particularly in the Chautauqua-Erie belt.

THE CHAMPION.

The Champion is an early blue variety that belongs to the same category as the Moore and the Worden in that it is sold upon the reputation of the Concord. In this case the Concord is hurt by the substitution, as the Champion is of poor quality, with a sour and rather disagreeable taste. It is an important variety for the lighter soils of Michigan, but does not assume commercial importance in other leading districts. Its low quality usually results in reduced demand, and it commonly sells from 1 to 5 cents below the Worden, the Moore, and the Concord, the usual discount being 2 to 3 cents on a 4-quart basket.

VARIETIES UNIMPORTANT COMMERCIALLY.

There are hundreds of other American varieties widely grown in a small way, but their commercial importance is slight. It is safe to assume that 95 per cent of the stock shipped to terminal markets belongs to the 7 varieties named above. Offerings of the varieties named below sometimes appear in the larger jobbing markets, but rarely in car-lot quantities, and are usually sold merely as blue, red, or white varieties. The more important of these white or green varieties are the Diamond, Dutchess, Elvira, Pocklington, Norton, and Winchell; of the red varieties, the Agawam, Brighton, Diana,

Goethe, Lindley, Virgennes, Ulster, and Wyoming; and of the blue or black varieties, the Campbell, Clinton, Cynthiana, Ives, Isabella, North, and Wilder. Of these, the Duchess, the Elvira, the Ives, the Norton, and the Cynthiana were used largely for wine, and it is questionable whether the continued production of these varieties will be found profitable, on account of the various commercial weaknesses each one possesses. The Ives, however, has been successfully used for the manufacture of grape juice, and this market outlet may be further developed for this variety.

METHODS OF PREPARATION FOR MARKET.

The changes forced upon the grape industry by recent legislation necessitate the most careful and businesslike handling of the crop. Astonishingly large numbers of growers and shippers are entirely unacquainted with methods and channels of distribution employed in other sections. Accordingly, this study and report have been made on comprehensive lines.

PICKING.

In picking, the bunches are cut from the vines with short, sharp spring scissors or grape shears and are laid in the tray or picking basket. This tray is usually placed on a low stool which is carried along the rows. The stool makes for efficiency and higher quality, as it is unnecessary for the picker to bend over each time a bunch is placed and the damage to the fruit which would result from carelessness in throwing or dropping the bunches into the container is avoided. When full, the trays or baskets in which the fruit is picked are placed in the row under the vines to be collected later. Stone boats or narrow double-turn wagons are used to collect the full containers and carry them to the packing house or station.

TRIMMING AND PACKING.

For a high-class pack some trimming is usually found necessary to remove defective berries. Although the fruit is seldom affected by insect pests, in some sections the second brood of larvæ of the grape-berry moth feeds on the inside of the berry, resulting in a shrunken condition or in so-called "wormy" grapes, which at times cause serious damage but of a kind which does not spread. The black rot often destroys many berries in a cluster and sometimes the entire cluster, while infection by the powdery mildew may destroy the marketability of individual berries or whole bunches. Also, in

some varieties, small unripened berries are found at picking time, and sometimes some of the berries in a bunch, especially those at the shoulder, are so tender as to crack or shell at picking.

FIELD OR PACKING-HOUSE TRIMMING.

Trimming may be done as the grapes are picked, in which case they are packed directly into the final container, or the grapes may be hauled to the packing house in trays and there trimmed and packed. The advantage of packing in the field is one of convenience, for the resultant pack is usually one of relatively low quality, as many defective berries are overlooked; also short measure is likely to occur in field packing. The principal cause is the shrinkage of the fruit after leaving the vine. The disadvantages of trimming and filling in the packing house are the added expense and the mechanical injury often caused by the additional handling, which may be minimized, however, by careful methods. It is generally believed that the resultant pack is usually of a higher quality than if done in the vineyard. The careful trimming made necessary by any serious damage, either by insects or disease, can best be done in the packing house. Many grapes from the Central Lakes and the Hudson River Valley districts of New York receive this extra attention, but in the Chautauqua-Erie belt insect and fungus injury are so light that a very good quality can be packed in the field by a moderately careful picker.

Central packing houses have been operated in a few instances, but without great success, due to various factors, such as extreme perishability of the product, the difficulty of securing sufficient skilled labor, and the high overhead cost of a packing plant for the short period of use.

GRADES.

No standard grades of grapes, as such, have been adopted, but certain cooperative associations and individual shippers have established reputations for high quality and good pack and receive a premium for their stock, which is marked by attractive labels pasted on the cover of the baskets in which their grapes are shipped. Two and 4 quart baskets may be labeled or branded in this manner, but 12-quart baskets not so conveniently. Branded stock receives a premium of from 1 to 4 cents over unbranded, generally about 1 to $1\frac{1}{2}$ cents on 2-quart baskets and 2 to $2\frac{1}{2}$ cents on 4-quart baskets.

CONTAINERS.

Wooden veneer baskets, of the Climax type, have been adopted as the standard package for table stock, in 2, 4 and 12 quart sizes, dimensions prescribed by Federal statute in 1916. Before this law

went into effect, the irregularities of the packages in use were detrimental to the industry.[1]

The tray, or lug box, has been one of the most-used containers, but its popularity is on the wane. As it is a low, narrow, open, rough box, holding 25 to 35 pounds of fruit, it is a very satisfactory container for use in the vineyard, when fruit is picked into it direct from the vines. The tray is in general use for bulk shipments. However, for any market where the appearance and condition of the fruit affects its sale, this package should never be used, as it is unattractive in appearance and often brings the fruit to market in a bruised condition.

The "gift case" is an important container on the New York market, but is seldom used outside of the Hudson River Valley. It is a small case or crate containing eight 2-quart baskets, separated into 2 tiers of 4 each. The grapes are covered with white transparent paper, and the tiers are separated by a thin board. After the contents are disposed of this case is not returned, and the name "gift case" was adopted to distinguish it from the tray or lug, which is called "return crate" on this market.

Practically all long-distance shipments are made in Climax baskets, but in most of the large markets of the country local grapes may be found, which have been either hauled to market or shipped in less than carload lots, in almost every conceivable type of container.

Market baskets are of three general kinds—the diamond weave, the square weave, and the veneer. As a class they rank next in importance after the Climax type. The sizes are very numerous, 8, 9, 10, 11, 12, 13, 14, 15, and a few 16 quart baskets being found. The 8-quart or quarter-bushel basket, the 14 and 15 quart or short 2-peck basket (half-bushel basket), and the short one-third bushel basket, holding between 10 and 11 quarts, are found most frequently. It

[1] As the Climax baskets are of so much importance to the industry in the East the following paragraphs are quoted from the standard container Act (39 U. S. Statutes at Large, p. 673). See also United States Department of Agriculture, Office of Secretary Circular No. 76: Rules and Regulations * * * under the United States standard container Act of August 31, 1916.

(*a*) The standard two-quart Climax basket shall be of the following dimensions: Length of bottom piece, nine and one-half inches; width of bottom piece, three and one-half inches; thickness of bottom piece, three-eighths of an inch; height of basket, three and seven-eighths inches, outside measurement; top of basket, length eleven inches and width five inches, outside measurement. Basket to have a cover five by eleven inches, when a cover is used.

(*b*) The standard four-quart Climax basket shall be of the following dimensions: Length of bottom piece, twelve inches; width of bottom piece, four and one-half inches; thickness of bottom piece, three-eighths of an inch; height of basket, four and eleven-sixteenths inches, outside measurements; top of basket, length fourteen inches, width six and one-fourth inches, outside measurement. Basket to have cover six and one-fourth inches by fourteen inches, when cover is used.

(*c*) The standard twelve-quart Climax basket shall be of the following dimensions: Length of bottom piece, sixteen inches; width of bottom piece, six and one-half inches; thickness of bottom piece, seven-sixteenths of an inch; height of basket, seven and one-sixteenth inches, outside measurements; top of basket, length nineteen inches, width nine inches, outside measurements. Basket to have cover nine inches by nineteen inches, when cover is used.

is an interesting fact that many baskets which sell for 1 peck are a trifle large, and almost all selling for 2 pecks are considerably short measure; thus it is well for the consumer to buy two 1-peck baskets when he can do so at the price of a 2-peck basket. To avoid prosecution, city dealers should be careful not to sell such short-measure packages as standard sizes of the containers they represent.

A container for fancy stock, known as the Delaware eight-basket carrier, is being used to some extent in Delaware, New Jersey, and in the vicinity of Philadelphia. It is a slat crate composed of two layers of 2-quart till baskets in layers of 4 baskets each, and is similiar to the Georgia peach carrier.

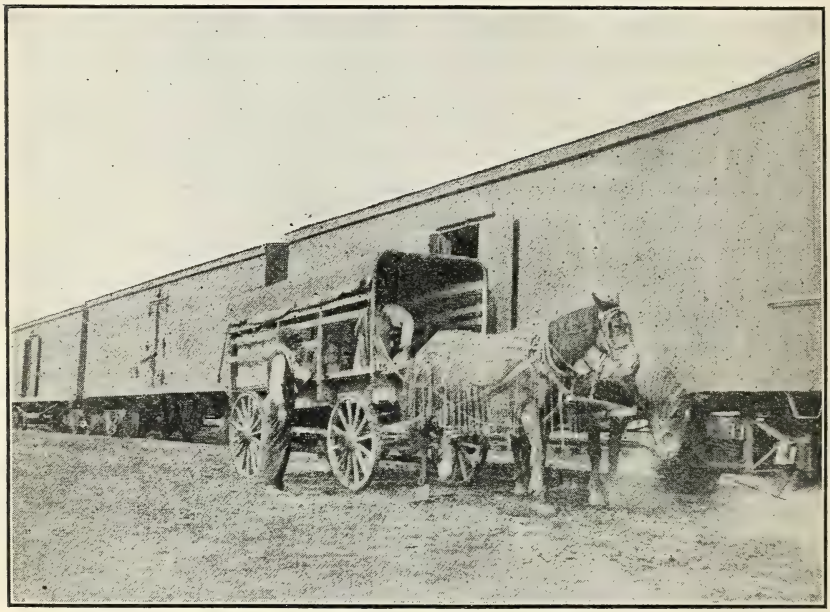

FIG. 1.—Loading cars in producing sections.

CAR LOADING.[2]

The improper car loading of grapes shipped to market is a most potent cause of loss. For all types of packages the "straight system," with all the packages placed end to end, extending from one ice bunker to the other, has been found most satisfactory. In every alternate layer of Climax baskets it is necessary to load those that touch one bulkhead crosswise in the car, in order to fill in the otherwise vacant spaces, but under no consideration should this be permitted elsewhere in the load.

[2] See Bird, H. S., and Grimes, A. M. Loading American Grapes. U. S. Department of Agriculture, Markets Document 14, 1918.

All slack should be taken up as the packages are loaded with racks to fill out at the end of the car when there is a surplus space. Every fraction of an inch of surplus space from side to side of the car should be tightly filled in by loading the last row diagonally and mismatching or "nesting" each row upon the one below.

"Mixed loads," or loads made up of different sizes of Climax baskets, or of a combination of baskets and trays, should be avoided. When absolutely necessary to ship mixed loads in order to assemble a full car, the one rule is to make completed rows of each kind of package from end to end of the car.

THE COMPLEXITY OF THE MARKETING MACHINERY.

The problem of marketing, in its final analysis, consists of the disposition by the producer of a product, of which he has more than he requires, to the consumer, who has not as much as he desires. This is fundamentally true of all trade. A simple sale from the producer to consumer is seldom possible, because of complicating factors.

The functions of the much-criticized middlemen, distributors, jobbers, and retailers have made possible the present high development of the commercial grape industry, for taken as a whole they form the agency through which the farmers' grapes are marketed. As it is much cheaper and more satisfactory, and as it permits wider distribution, the practice of shipping grapes in carlot quantities has been developed. This has led to the creation of yet another type of middleman, the local dealer and carlot assembler, who either buys outright from the producer or acts as his agent in disposing of his product.

Undoubtedly sharp practices and inefficient methods have been, and to some extent still are, in use by some middlemen, which work to the manifest disadvantage of both the grower and the consumer; but generally the methods and channels of marketing grapes have become so well-developed and standardized, and competition has so far eliminated dishonest dealers and inefficient methods, that the grape industry of the East is in a very good condition, in so far as distribution is concerned.

THE USUAL CHANNELS OF TRADE.

The methods used in different localities vary with local conditions, but any or all of the following methods may be applicable. A farmer with a small quantity of grapes to dispose of has the advantage in sections where the production is small; while a grower of large quantities has the advantage in one of the so-called grape sec-

tions, where surplus of production over local demand necessitates shipment to distant markets.

Grapes usually move successively from the grower to the local carlot assembler (local buyer or cooperative association), to carlot distributor (sometimes), to city carlot receiver, to jobber, to retailer, and then to consumer. Of course, there are many short cuts and variations to this method which have been worked out to meet individual conditions and requirements. It may seem cumbersome and inefficient to pass the fruit through so many hands, but when it is considered that sometimes the grapes of 50 or 60 growers are included in a car which may be shipped a great distance, perhaps as far as from New York to Colorado, or from Michigan to Texas, and that often the contents of the car go to over 2,000 different ultimate consumers, the difficulties of the problem and the need for specialization by the handlers are apparent. If division of labor and specialization are commended in manufacturing plants, should they be condemned in the grape industry?

SALES BY GROWERS DIRECT TO LOCAL CONSUMERS.

The simplest method of sale, that of producer direct to consumer, though open to all growers and to a limited extent practiced in all sections, is not of great commercial importance, and the larger the production of grapes in a section, the smaller is the relative importance which this method assumes. Farmers with small vineyards in a nongrape-producing locality often find a ready market among their neighbors, or they may haul their product to neighboring towns and villages and there peddle their crop. While the method is relatively unimportant, the quantity of grapes disposed of by this method in portions of the South, the Middle West, New England, and the North Atlantic States, outside of the specialized areas of grape production, is fairly large in the aggregate. The proportion of the consumer's dollar received by the farmer by this method may seem large, but it should be borne in mind that he has performed the functions of distributor, transportation company, jobber, and retailer, and is receiving payment for these services.

SALES IN SMALL LOTS BY GROWERS TO NEIGHBORING CITY CONSUMERS.

A second method is the direct sale by growers to consumers in neighboring cities and towns by express and parcel-post shipments. This has the general advantages and disadvantages of the former method and requires the services of less people in the distribution, but requires higher transportation charges than carlot shipments and necessarily reduces the possible marketing area. Also, as in the former case, this method is not feasible for large vineyards. The growth

of this method is hindered by the difficulty of getting in touch with consumers and of making collections, and by the fact that most city consumers desire grapes in lots of one or two baskets on short notice. The aggregate quantity thus sold is small, but the method has a wide application.

The recent great interest on the part of urban dwellers in the subject of marketing has led to the formation of many consumers' cooperative associations or buying clubs, which should present a profitable field for development to growers with small acreage.

It should be borne in mind in all of the sales direct to the consumer that the prices generally should not be so high as the retail price, for the consumers' ability to purchase stock in just the quantities he desires and just when he desires them, is one of the services figured into the retail price. A fair price for the farmer to charge the consumer for such sales would be the price at which the same stock sold to retailers in large near-by markets. Thus the producer receives payment which represents not only the cost of his product but the costs and profits of the buyer, carlot distributor, and jobber, and the consumer saves what would represent the cost and profit of the retailer on similar transactions. If a farmer ships in this manner direct to consumers, basing his charge on f. o. b. prices, he has a right to ask more than the regular current price to reimburse him for his extra trouble and knowledge of marketing conditions. When he peddles his products he has a right to charge the full retail price, but as he usually wishes to make quick sales, he may find it expedient to ask a slightly lower price.

SALES BY GROWERS IN PUBLIC MARKETS.

Grape growers near the larger cities sometimes find it to their advantage to haul their stock to the public markets, where they may sell direct to the consumer or to retailers at current market prices.

SALES BY GROWERS IN SMALL LOTS DIRECT TO RETAILERS.

Growers sometimes find it to their advantage to sell direct to retailers located in neighboring towns and villages. Such a trade can be made profitable by an energetic producer, who, in years of crop shortage, can generally obtain stock from his neighbors and in years of heavy production can dispose of his surplus through other channels. The disadvantages of this method of sale are numerous, the field of distribution is reduced by the necessity of less than carlot shipments, the freedom of the retailer in buying only for his requirements is reduced, and the uncertainty of less than carload

shipments is added. The costs and profits of the buyer, car-lot distributor, and the jobber are eliminated, and this saving should be shared between the farmer and the retailer to make this method satisfactory and profitable to all concerned.

SHIPMENTS ON CONSIGNMENT.

By far the most common method practiced by farmers who ship their own grapes is to consign to commission houses or brokers, who in turn sell to jobbers or sometimes direct to retailers. These factors act as the agent of the shipper, disposing of the grapes at the highest price obtainable, paying transportation, icing, and drayage charges, deducting a certain rate as commission, and remitting the

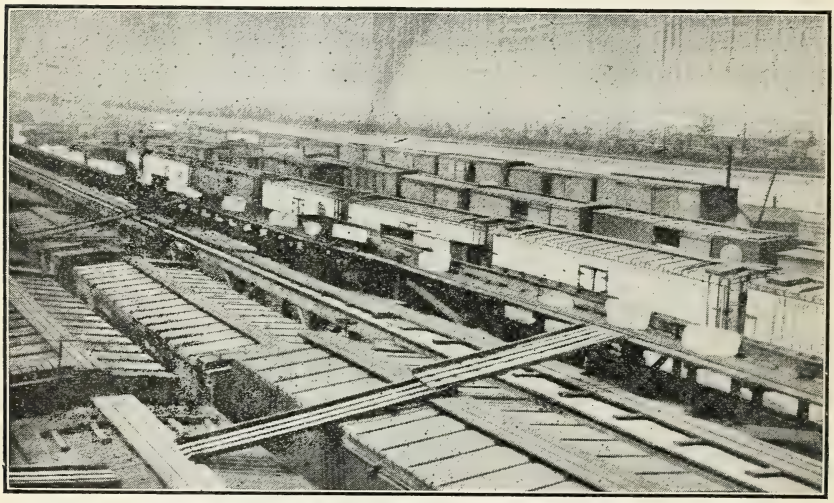

FIG. 2.—Icing cars in a large distributing center.

balance to the shipper. In some cities, such as Washington, D. C., and Columbus, Ohio, the functions of these various factors are not always distinct, as some houses perform the duties of car-lot receiver, commission merchant, broker, and wholesaler. The commission charge ranges from 5 to 15 per cent on the gross sales, but is usually between 7 and 10 on large quantities. An understanding should be reached beforehand as to exact percentage of commission to be charged.

Growers who have sufficient acreage to enable them to ship in carload lots have a great advantage in this method of sale over growers who are forced to ship in less than carload lots, as the transportation costs are much less, temporary refrigeration while in transit (icing) is practicable, and the shipper has a much wider field of action, for he is able to forward his product to almost any market desired, either by direct billing or by diversion. By this method the farmer saves

the costs and profits of the local carlot assembler, whose functions he has himself assumed. It should be remembered, however, that the business of growing grapes and the business of marketing grapes are as different and distinct as the business of manufacturing agricultural implements and the business of running a rural hardware store. The fact that a farmer is able to produce grapes of high quality in abundance is no sure indication of his ability to dispose of them at a profit, and he should not attempt to enter this highly specialized field without a very clear understanding of the methods to be followed and an intimate knowledge of the demands and requirements of the various markets.

Unfortunately very unbusinesslike methods of consignment are employed by many growers who ship their products indiscriminately to the nearest large market whenever they happen to be ready to pick, without any study of the existing conditions on that market, or even a notification to their agent of their intention to ship.

OVERLOADING MARKETS.

Every market has a definite limit to its daily consuming capacity. When the carlot receivers or jobbers on any market find that the supplies of grapes on hand do not meet the demand, they naturally take steps to purchase them at the nearest producing section where the desired varieties and quality may be profitably obtained. On the other hand, if city dealers have several cars a day rolling toward their market, and in addition to these several shippers forward cars unsold to the same market, and they all arrive together, with perhaps heavy arrivals of freight and express less-than-carload shipments, it is probable that these arrivals will exceed the demand, and there will be a decline in price. Moreover, any continued surplusage of supplies will clog the channels of trade and result in severe loss to all concerned. Shippers should study the receipts on all markets to which they intend to ship and avoid those that are congested. In addition, when they ship on consignment, they should write or telegraph to their dealers giving date of shipment, number and size of packages, varieties included, and a fair statement as to the quality and condition of the shipment. When shipping in carlot quantities, they should also specify car number and initials and should forward the bill of lading.

CONSIGNMENT DECLINING.

Principally on account of the difficulties mentioned above, the straight commission-house business in the grape industry seems to be on the decline. Many city dealers prefer the more businesslike method of purchasing outright in the producing sections the stock they need. In sections of large acreage, where marketing methods

have become standardized, growers who consign their stock in normal years are less often found, and it is only in the outlying and scattered districts, in sections from which the shipments are small, that consignment is now the standard practice. It should not be overlooked, however, that in a generally weak market consignment may be the only alternative.

CONTRACT SALES.

Sales on contract, or outright sales, are sometimes made. Such sales are the result of an individual contract, which varies greatly in its adaptation to local conditions and is the result of bargaining between the grower and the buyer, who may be a consumer, such as a grape-juice factory, or a city carlot receiver or a local buyer. Most of such sales are made on the basis of cash on delivery and are contracted for before the picking season. With the exception of sales to juice factories, this method of sale is seldom found in leading commercial sections, but is confined to outlying vineyards where growers are not well in touch with market prices and conditions. A notable exception is the Keuka Lake district of New York, where most of the growers sell on contract to local dealers well in advance of the harvesting season.

SALES TO LOCAL BUYERS OR CAR-LOT ASSEMBLERS.

The most common method of sale is to local buyers or car-lot assemblers at the current market price. Where grapes are produced commercially there are generally several dealers who make a specialty of buying for cash the crop of the growers in their locality, usually delivered to the car. Here they assemble them in carloads and dispose of them through any of the usual market outlets. This is the simplest and easiest method of sale for the grower, as it transfers the highly specialized business of marketing the crop to a man who has had relatively wide experience. Besides his other duties the local carlot assembler often assumes large financial risks. The grower should also expect to pay him for his specialized knowledge of the industry.

Conscience and competition usually keep down the profit of the local buyer to reasonable figures. In the sections of large acreage, such as parts of New York and Michigan, the competition between buyers is usually so keen that the grower is assured of the full market price for his product. However, in the more isolated sections, abuses have crept into the system and individuals are often found who absolutely control their limited districts, buying grapes not on the basis of what they are worth at the current market price, but on the basis of the lowest price at which they can be obtained.

Such abuses are usually founded upon the growers' ignorance of marketing conditions and their failure to interest outside competition. Publicity, which informs dealers in other sections of the local conditions and induces them to enter the deal, often provides the necessary competition. Cooperation between the growers to perform themselves, and for their own profit, the functions of the local buyer, is another alternative.

Conditions are seldom improved by individual growers entering the field of marketing and trying to compete with the buyer, for in few such cases is the acreage controlled by any grower sufficient to enable him to ship easily in carload lots and the necessary connections with the trade in large terminal markets usually are lacking. Too often the power of monopolistic local buyers is strengthened by the failures of growers who have attempted to break away and enter the field of marketing.

Most local buyers or carlot assemblers try to dispose of their stock to city carlot receivers on shipping-point basis, as the speculative features of their business are thereby reduced to a minimum. When their reputation for financial soundness and integrity has been established they are usually successful. This type of factor may dispose of his crop in any of the numerous ways which are also open to the grower—on consignment, to traveling city buyers through exchanges, to juice factories, etc.

In a few cases carlot assemblers at shipping points have developed businesses similar in their methods to cooperative marketing associations, in that they handle the product of some of the growers in their locality, acting merely as an agent and making a certain fixed charge per package. An example of this method is to be found at North East, Pa.

SALES THROUGH COOPERATIVE ASSOCIATIONS.[3]

In many of the more important sections grape growers have taken advantage of the possibilities of collective action by the formation of cooperative associations. Cooperation is the act of working with others for a common benefit, and in marketing fruit it is most practical in its application to crops of which a few standard varieties ripen at the same time. Thus it has proved of great value in the grape industry.

As these associations take charge of the marketing of the grapes produced by their members, they perform a function in the industry quite analagous to that of the local buyer or car-lot assembler. The associations generally receive the grapes at the car door, load them

[3] See Bassett, C. E.; Moomaw, C. W.; and Kerr, W. H. Cooperative Marketing and Financing of Marketing Associations. *In* Yearbook U. S. Department of Agriculture, 1914.

in the car, inspect their quality, and sell them for the highest price obtainable. The grower usually allows the association to take full charge of the shipment, and payment is commonly made by pooling the returns of the shipment of each day and remitting to the growers in proportion to their haulings of the various sizes and varieties, after deducting a certain charge for expenses. The details of these business arrangements, which depend on the constitutions and by-laws of the various organizations, cover a wide range of conditions and are generally covered by a contract between the association and each of its individual members. In some cases growers are allowed entire freedom of action, in that they may market their crops through the associations or through outside agencies, as they see fit; in others they are obligated to allow the association to handle all of their crops. Some associations charge their members on a percentage commission basis; sometimes they make a fixed charge per basket or per ton, out of which the expenses of management must be borne. The profits, if any, at the end of the shipping season are divided among the shareholders of the association or prorated among the shippers, according to the rules of each association.

Most cooperative associations in the grape industry endeavor to sell at the loading station. Other methods, such as consignment and sales to juice factories, are practiced, but the great bulk of the stock is sold on telegraphic orders.

Notable examples of cooperative grape shipping associations are to be found in the leading sections of Michigan, New York, and the Missouri Valley. While cooperation solves many problems, it will surely result in failure unless the two basic requirements are met: (1) Such an organization must be founded on some definite urgent need, and (2) the manager or director of such an enterprise must possess the requisite ability and knowledge of marketing conditions.

SALES TO GRAPE-JUICE FACTORIES.

The tremendous growth of the unfermented grape-juice industry during the past few years has established a most satisfactory market outlet for those growers whose vineyards are in close proximity to such factories. A large proportion of the tonnage produced in the Chautauqua-Erie belt, in Michigan, and in the Hudson River Valley is consumed in the manufacture of this product, and in the first district named nearly as much stock is consumed locally by factories as is shipped to outside points.

The problems of marketing are reduced to a minimum for those growers who sell to juice factories. To some extent, both in Michigan and in New York, factories purchase their requirements from neighboring growers under contracts made before the grapes mature,

which specify definitely the price to be paid, but the common method of sale is a contract to purchase the grower's entire crop at the market price prevailing on the day of delivery.

Confusion sometimes arises as to just what the market price is, particularly when the consumption by juice factories is so great that few bulk grapes are sold for outside shipment. This occurred in Michigan in 1918 and to a less extent at the beginning of the season of 1918 in the Chautauqua-Erie belt. As no ratio between the price of 4-quart baskets and that of stock shipped in 12-quart baskets or trays has ever been established, it is usually left to the juice factories to pay what they think proper. Such situations are unfortunate, as they furnish a chance for unfair practices, but in the main the leaders of the grape-juice industry have the interests of the grower at heart and may be relied on to pay a fair price for what they buy. A still more effective insurance of a fair return to the grower is the fact that the production of grape juice has not of late years equaled the trade requirements. This has caused a very healthy competition between the various factories for the products of the vineyardist.

Most of the grapes used by juice factories are produced within hauling distance, but in 1918, on account of the short crop, much stock was received by shipment, both by short hauls from within the same district and by long hauls, as between Michigan and Westfield, N. Y., and between Chautauqua County and Highland, N. Y.

The common grape trays, usually owned by the factory, are the standard package for grape-juice stock, though 12-quart Climax baskets are often employed, into which grapes are picked directly from the vines. Sales of stock in baskets are generally made on the basis of the gross weight; that is, with the baskets included.

While juice factories generally prefer to buy from the grower, they do not confine their purchases to this source, but sometimes send out representatives, who buy from local dealers or cooperative associations or purchase stock on telegraphic orders. Growers in outlying sections who are able to ship in carload quantities would do well to investigate the possibilities of this method of sale. On account of its acidity, the Concord comprises the great bulk of the grape-juice stock, but the Worden is sometimes used, and the Clinton is recommended as a valuable variety for this purpose.

FREE-ON-BOARD SALES.

In the early days of the grape-shipping industry, sales were made almost exclusively at the point of destination. Of late years the tendency has been toward the other extreme, until the great bulk of shipments from the more important grape-growing sections are now sold f. o. b. point of origin.

"F. o. b." is an abbreviation of the phrase "free on board," which means loaded in the car, ready for shipment, with no attachments to the stock. From the definition it will be seen that a car may as well be f. o. b. Kansas City, Mo., as f. o. b. Lawton, Mich., and so, while this phrase is used almost without exception in this industry as referring to shipping points, the exact station where cars are loaded should be specified in all cases.

Sales made on an f. o. b. basis imply contracts, either written or understood, between the shipper and the buyer, which cover a wide variety of clauses and conditions, but which have been standardized into three general types: Carloads f. o. b. usual terms; carloads f. o. b. cash track; and joint or open account sales. The volume of less than carload shipments of grapes is so small that carloads are regarded as the unit.

CARLOADS F. O. B. USUAL TERMS.

The great majority of the Michigan crop is sold on the basis of "f. o. b. usual terms," and this type of trade has reached a high stage of development in Berrien and Van Buren Counties.

The shippers in this section, who are for the most part brokers and cooperative associations, keep in close touch with all possible market outlets, sending out daily quotations by wire to any available consuming center where they think they can place a car. Whenever one of these bids is accepted by a city buyer, assuming of course that his reputation for business integrity and financial soundness is satisfactory, they telegraph acceptance of his order, usually giving the number and initials of the car used to fill it, as well as the number and varieties of the baskets included. The buyer, with his order, has furnished shipping directions, according to which the car is billed out and turned over to the transportation company. The shipper then takes the bill of lading, received from the railroad, to his banker, and instructs him to draw a sight draft on the buyer. The banks in this section are usually willing to finance these dealers and advance them cash for 75 per cent of the face value of this draft, accepting the bill of lading as security. The bill of lading, with the sight draft attached, is then mailed to the correspondent bank through which the buyer deals, if possible in the city to which the cars are destined. The arrival of the sight draft attached to the bill of lading is usually approximately coincident with the arrival of the car, and the buyer is informed in each case. He then inspects the car, which is permitted in the standard form of contract and bill of lading. If he believes that the grade and quality are up to the standard agreed upon he accepts it. He does this by going to the city bank and "taking up" the sight draft. He pays its face value, receives the bill of lading, and thereupon accepts title to the shipment.

For this service the local banks in Michigan charge a fee of 25 cents per $100 face value of the draft, and the balance is credited upon payment of the draft, less any costs charged by remitting banks and less also an interest charge of 6 per cent on the money advanced, after five days' grace expire. These are the standard terms to brokers. Cooperative associations are given financial accommodations on nearly the same basis, but must have a sufficient balance on hand to cover all transient drafts.

One of the most frequent causes for friction between shippers and receivers is the privilege of rejection at destination, incident to this type of sale. No one can deny the right of the receiver to refuse stock which does not come up to the quality agreed upon, but the complaint of shippers is that in a falling market even good stock is rejected as unsound. This, of course, is sharp practice and is condemned by the more honest members of the trade. In this connection mention should be made of the Food Products Inspection Service of the Bureau of Markets, which, in many of the larger markets, makes official inspection upon request of the shipper or receiver at a cost of $4 per car or $2.50 on small lots, and issues certificates as to the quality and condition of the stock which constitute prima facie evidence in the event of a dispute.

When a buyer decides to reject a car, he refuses to accept the sight draft and bill of lading and usually notifies the shipper to that effect, often telegraphing a new offer for the car. This the shipper may accept or decline, and in the latter case he can sell to other dealers in the same market or divert the car to another city. Any one of these courses necessitates new arrangements with both the receiving and remitting bank. Frequently, upon claim by the receiver, a shipper will grant a firm with which he has done business for some time a certain "allowance" or the discount of a few cents per basket on stock that arrives in bad condition, even though the receiver accepts the draft.

CARLOADS F. O. B. CASH TRACK.

In its simplest form the type of sale known as "f. o. b. cash track" consists in the purchase of a loaded car of grapes, ready for shipment, by a traveling representative of a city dealer, of a juice factory, or of a distributing agency, payment to be made before the car moves. This type of sale is practiced to an increasing extent in all sections. But cash track sales are sometimes made in New York and in Michigan upon telegraphic orders when the buyer agrees to accept the cars at shipping point and has made arrangements to telegraph the amounts due. Another financial arrangement is for

the buyer to deposit money at the shipper's bank, allowing draft to be made at the time of shipment, or even to have his own bank guarantee a credit up to a certain amount and have draft made directly upon the city bank. Thus sales made "shipping point acceptance, bank guarantee" are in reality a type of "cash track sales."

RELATION OF "CASH TRACK" AND "USUAL TERMS" SALES.

The primary difference between "cash track" and "usual terms" sales is the place in the transaction where the actual change of ownership occurs. Of the two methods, sales made on the basis of "carloads f. o. b. cash track" are to the benefit of the seller or shipper, and sales made on the basis of "carloads f. o. b. usual terms" are to

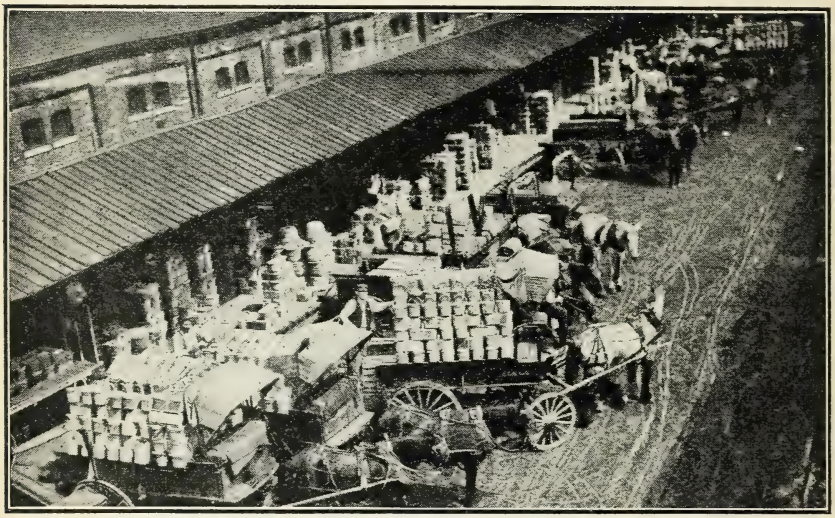

FIG. 3.—Grapes arriving at the terminal market.

the benefit of the buyer or receiver. In the former case the buyer assumes a risk as to the honesty and business integrity of the shipper, and in the latter case the shipper assumes a risk as to the honesty and financial ability of the receiver. Further, in "f. o. b. cash track" sales the buyer assumes all risks of deterioration in transit, delays, etc., and the shipper is relieved of these risks, while in the case of "f. o. b. usual terms" sales, at least in present-day commercial practices, the case is reversed, and the shipper takes the risk. In many cases these risks cause one of the parties heavy losses.

Thus we find shippers anxious to sell "cash track" even at a slightly lower price and buyers trying to make purchases on the basis of "usual terms." Which of these may succeed in this commercial competition depends on the organization of either class of factors and upon the conditions of supply and demand. In years

of crop shortage, when buyers are clamoring for shipments and hunting to find them, many sales are made on the basis of "cash track," while in years of normal supply the shippers have to seek buyers and are thereby forced to sell on "usual terms."

In the case of oversupplied markets, or when the average quality of the stock is poor, it is sometimes impossible to sell all of the grapes ready for shipment on an f. o. b. basis. Under these conditions the only alternative is to consign to dealers in the large terminal markets for sale on a commission basis, or to sell through city brokers.

SALES ON ACCOUNT.

Account sales are of two general types, "joint accounts" and "open accounts." Joint account sales are common in the Chautauqua-Erie belt and to some extent in the Central Lakes, and are infrequently seen in other important sections. Deals of this sort presuppose an agreement between a shipper, usually a local buyer, and a carlot receiver in a terminal market, whereby the two enter into a virtual parnership to buy, ship, and sell grapes, the final profits being divided between the two, usually on the basis of joint account.

Open account sales are common in the Chautauqua-Erie belt and are variable in type, their particular characteristic being that they are made between shippers and dealers who are mutually confident in each other's integrity and financial soundness, so that sales are made at what the shipper says is the market price and allowances are made for the arrival of stock in markets in poor condition, on the word of the buyer, and for a falling market. After the car arrives in market and is sold the buyer remits to the shipper, thus closing the account.

SECTIONS WHERE F. O. B. SALES ARE MADE.

While the great bulk of the commercial crop of the East is marketed by these methods, f. o. b. sales are seldom found outside of the few highly specialized grape districts, where each of the larger shippers is able to offer several cars a day. In Michigan, the Chautauqua-Erie belt, parts of the Central Lakes district of New York, the Hudson Valley of New York, and parts of the Missouri Valley district, factors, local dealers, or cooperative associations have so developed their business and established contacts in the cities to which they usually sell that they are enabled to make most of their sales on telegraphic orders, especially in seasons of short production. In outlying parts of these districts and in the less important sections of Delaware, the Southeast, New Jersey, the Ontario shore of New York, and parts of Missouri, few sales are made on an f. o. b. basis, as, except in a few instances, there are

not sufficient cars shipped from any one point to establish its reputation and to cause carlot buyers to investigate its possibilities. Most cars from these districts are rolled unsold, generally on consignment.

DESCRIPTION OF LEADING PRODUCING SECTIONS.

THE CHAUTAUQUA-ERIE BELT.

Location and Extent.

The Chautauqua-Erie belt is probably the most specialized grape-growing section in the United States outside of California. The industry reaches its highest development around the towns of North East, Pa., and Brocton, Portland, Westfield, and Ripley, N. Y. The commercial vineyards are found in a long narrow strip of land running from Eden, N. Y., to Girard, Pa., along the shore of Lake Erie, including parts of the counties of Erie, Pa., and Chautauqua, and Erie, N. Y., and to a much less extent parts of Cattaraugus County, N. Y.

Portland and Brocton, N. Y., are the leading shipping points of 2-quart baskets; Ripley, N. Y., and North East, Pa., of 4-quart baskets, and the 12-quart trade is the most important at Brocton, N. Y., and North East, Pa. Large grape-juice factories are established at North East, Pa., and at Westfield, Ripley, Brocton, Fredonia, and Silver Creek, N. Y.

Table 2 shows the carloadings at the various stations throughout the belt as reported to the Bureau of Markets by the originating railroads:

Table 2.—*Carloadings of grapes in the Chautauqua-Erie belt.*

	1916	1917	1918	1919
Erie Co., N.Y., Sept.–Dec.:				
Angola	42	89	6	68
Buffalo	2	0	0	0
Derby	3	6	0	13
Eden Center	47	86	12	112
Farnham	2	9	0	14
Lawtons	0	0	0	1
North Collins	66	85	6	50
Erie Co. total	162	275	24	258
Cattaraugus Co., N. Y., Oct.–Nov.: Perrysburg	97	77	11	23
Chautauqua Co., N. Y., Aug.–Nov.:				
Brocton	423	325	95	296
Dunkirk	28	26	0	10
Forestville	137	135	31	158
Forsythe	0	0	29	0
Fredonia	241	224	14	268
Irving	90	11	0	39
Laona	44	22	0	40
Mayville	17	36	0	24
Minton	0	0	7	0
Portland	332	190	124	282
Pratts	0	7	0	0
Prospect	16	0	0	0
Ripley	352	258	102	211
Sheridan	118	112	64	209
Chautauqua, Co., N. Y., Aug.–Nov.—Continued.				
Silver Creek	132	114	8	211
Smiths Mills	44	17	4	33
State Line	133	33	40	0
Van Buren	0	5	0	0
Vineyard	0	1	2	0
Westfield	148	120	6	68
West Perrysburg	0	0	0	75
Chautauqua Co. total	2,255	1,636	526	1,924
Unknown, loaded in New York	0	318	161	0
Erie Co. Pa., Sept.–Nov.:				
Erie	13	0	0	0
Fairview	6	6	2	7
Girard	9	0	0	23
Harbour Creek	252	143	64	204
Moorheads	63	53	34	49
North East	666	620	223	727
Springfield	3	2	0	3
State Line	0	3	14	0
Unknown	0	0	30	0
Erie Co. total	1,012	827	367	1,013
Total loadings in belt	3,526	3,133	1,089	3,218

The topography of this section causes a strict demarcation of the area suitable for grape growing and localizes the vineyards to the territory between the lake and the long ridge which roughly parallels it. On the lake side of the ridge the soil is a rich clay loam underlaid by limestone and shale and alternating with gravelly loam, an ideal grape soil. The effect of a large body of water upon the temperature is to reduce frost damage to a minimum and the steady lake winds give the belt almost perfect immunity from fungus diseases. These two factors, together with the character of the soil, make this section an almost ideal place for grape production.

History.

The commercial grape industry in this region began in the eighties, when the first shipments in carload lots were made. The prices realized, in some cases between $200 and $250 per ton, were so satisfactory that farmers began to plant extensive vineyards, cooperative marketing associations were formed, and individuals entered the field as buyers and independent shippers. The growth of the industry was rapid and at one time the shipments of the belt were estimated at 8,000 cars a year. During the past three years, however, acreage and production have both declined because of a root-worm injury which left the vines in such a weakened condition that they were unable to withstand the recent severe winters.

Clean culture is generally practiced, and is often supplemented by cover crops of rye, barley, buckwheat, or red clover. Generally the vineyards are plowed in both fall and spring and usually either manure or a commercial fertilizer is applied.

Acreage and Varieties.

The Concord is the chief grape of the belt, and it is roughly estimated that 95 per cent of the commercial acreage is of that variety. The Worden is next in importance and probably comprises 3 per cent of the crop. The Moore, Niagara, Delaware, and Agawam make up the remaining 2 per cent. The Moore and Worden are the first to mature, moving heavily in a normal season from about the second week in September until the first week in October. Concords start the last week in September or the first week in October and are usually cleaned up by November 1. The Niagara, the Delaware, and the Agawam, known locally as "varieties," are generally shipped early in October.

The commercial acreage of the belt is variously and unofficially estimated as from 33,000 to 35,000 acres, which is a material reduction from the number devoted to grapes three or four years ago. No official statistics as to production are available, but it is the consensus

of opinion of those in close touch with the situation that for the decade preceding 1916 the average yield per acre approximated 2 tons. The yield was materially reduced in 1917 by a very severe early freeze and in 1918 by a combination of rootworm injury and the winterkilling of the previous season. Very little replanting is being done.

Marketing Methods.

While practically all known methods of marketing are used in the belt, two general types of sale greatly predominate—sales to local buyers and sales to grape-juice factories. These factors are for the most part reliable, up-to-date business men, who have the interests of the industry at heart. The juice factories of the belt have more prominence than in any other section and furnish an easy and profitable outlet through which the grower may dispose of his crop. The importance of this phase of the industry is constantly increasing and will undoubtedly absorb the small quantity of grapes which have hitherto been used locally for wine manufacture. In normal years sales are made on an f. o. b. basis, which is facilitated by the high development of the industry in this section.

Cooperation.

At present there are four growers' cooperative associations in existence in the belt, only one of which is of more than local importance. This association has been the largest handler of grapes in this section and largely through its efforts the high reputation enjoyed by this section and the wide distribution of its products has been developed. The organization devotes special attention to the New England trade and makes many sales in the smaller cities of Massachusetts and Connecticut. Because this association allows many of its members to sell direct to juice factories, its shipments have not been so large in recent years as formerly.

Quality of Pack.

Careful trimming and packing and well-developed methods of handling the crop built up a high reputation for the grapes shipped from this section. The grape berry moth is troublesome in certain localities, but as fungus injury is generally very light, most of the grapes are picked into the shipping baskets directly from the vine. The pickers in this section are often paid by the basket. In this case it is to their advantage to place the bunches in the packages as loosely as possible. When the natural shrink is added, and the bunches are shaken down by the motion of the wagon and the freight car, these loosely packed baskets often reach the market with an inch margin

between the cover and the top bunch. Such short weight reacts upon the reputation enjoyed by this section and every one interested in the industry should strive to put a stop to this practice. The greatest responsibility rests upon the grower, who should take pains to secure a good, tight, full pack, remembering that the future of this section is dependent upon its recovery of the table-stock trade, and that every dissatisfied consumer reduces the terminal demand and the price.

Market Outlets and Distribution.

It is to be regretted that the data for the destinations of 1918 shipments only are available, as in that year production was far below normal and the field of distribution was materially reduced (see Appendix). However, it is known that shipments from this section have gone as far west as Denver, Colo., as far east as Portland, Me., and as far south as Atlanta, Ga. A very large number of the 1918 destinations show merely the interstation shipments, as from Ripley to Westfield, or from Brocton to Fredonia, of grapes intended for juice factories. It should be remembered that not all the carlot shipments represent table stock, as a very large percentage of the stock shipped in 12-quart baskets was used in the home manufacture of wine. This was especially true in the smaller cities of Pennsylvania and Ohio, where the proportions of the foreign-born population is large. Some of these cities are so small that a full carload of table stock could not have been consumed.

Although in 1918 the grapes from the belt went to 109 different cities and towns in two States, it can not be said that the shipments of this section show a generally wide distribution, as in that year nearly half went to four cities—Pittsburgh, Westfield, Boston, and Philadelphia. Much of the remainder of the crop went to parts of Pennsylvania, Ohio, and New York, adjacent to the belt. The Michigan competition prevents a greater expansion of outlets toward the West, and few cars are rolled in that direction until after the Michigan crop has been consumed, which in 1918 occurred earlier than usual. On the other hand, a fairly large business has been built up in New England, but the short crop in 1918 prevented the shipment of many cars to that section.

THE CENTRAL LAKES DISTRICT OF NEW YORK.

Location and Extent.

The Central Lakes district of New York is one of the most interesting and important grape-growing sections of the country The deep, long lakes of Keuka, Canandaigua, Seneca, and Cayuga make

the climatic conditions most favorable for grape growing, and the steep banks and high hills surrounding Keuka Lake, together with the thickly planted vineyards at its side, have given it the name of "the Rhine of America."

The commercial vineyards in this district may be divided into three main sections, those contiguous to three of the lakes mentioned above—the Keuka Lake section, comprising parts of the counties of Yates and Steuben; the Canandaigua section, comprising particularly the Naples Valley and Canandaigua section in Ontario County; and the Seneca Lake section, parts of Seneca, Schuyler, and Yates Counties, and, to a very limited extent, Ontario County.

Table 3 shows the loadings at the various stations throughout this district, as reported by mail to the Bureau of Markets by the various originating railroads:

TABLE 3.—*Carloadings of grapes in the Central Lakes district of New York.*

	1916	1917	1918	1919
Ontario Co., Sept.–Oct.:				
Canandaigua	25	17	25	11
Geneva	0	11	0	0
Naples	124	89	77	160
Orleans	21	0	0	0
Ontario Co. total	170	117	102	171
Schuyler Co., Sept.–Nov.:				
Hector	61	92	40	101
Valois	30	28	19	46
Schuyler Co. total	91	120	59	147
Seneca Co., Sept.–Nov.:				
Burdett	0	0	15	29
Caywood	14	40	19	34
Kendaia	62	41	9	50
Romulus	20	7	0	9
Seneca Falls	4	6	2	4
Yale	1	0	0	0
Seneca Co. total	101	94	45	126
Steuben Co., Sept.–Nov.:				
Hammondsport	199	99	108	191
Prattsburg	0	0	0	4
Rheims	0	0	0	6
Steuben Co. total	199	99	108	201
Yates Co., Sept.–Nov.:				
Benton	0	1	0	0
Bluff Point	127	125	55	132
Branchport	70	76	74	126
Dresden	20	11	2	18
Dundee	1	3	4	7
Glenora	1	1	0	0
Himrod	32	45	18	32
Middlesex	137	141	63	144
Milo	1	1	0	1
Penn Yan	508	298	149	260
Rock Stream	2	0	0	1
Starkey	45	28	15	41
Yates Co. total	944	730	380	762
Total loadings in district	1,505	1,160	694	1,407

HISTORY.

The earliest plantings recorded in the Central Lakes district were in Steuben County in 1830.[4] The industry spread slowly around the other lakes, and in 1854 the first commercial shipment was made to New York City. Shortly after 1860, the Concord and the Delaware were introduced into the district, and in the eighties the Niagara became very popular, particularly in Seneca County. Had all the vines set in this county come into bearing, they would have flooded the markets, for distant shipments were not then practicable.

[4] See Hedrick, U. P. The Grapes of New York. Report Agricultural Experiment Station for the Year 1907, II, pp. 83, 84.

as they are to-day. But this speculative enterprise was ill considered, many vines were planted in heavy clay soils, and few survived to come into bearing, as this variety is especially tender. Generally grapes do not do well in this district at an altitude beyond 200 feet above the lake level.

The particular development around Keuka Lake, where Catawbas are grown to greater perfection than anywhere else in the North, and in the Naples Valley, was toward wine production. The wine industry was begun in this section in the sixties, and by 1915 there were over 25 factories engaged in this process, Keuka Lake was the center of the American champagne industry, and important wine factories were in operation in Naples.

Acreage and Varieties.

As in the other leading grape-producing sections, the acreage is on the decrease and the reduction has been particularly marked in Seneca County. The commercial acreage of the district is variously and unofficially estimated at from 12,000 to 15,000 acres. No official statistics as to the average production are available, but it is the consensus among those in close touch with the industry that the average yield per acre for the whole district was formerly about a ton, the low figure being due to the many uncared-for vineyards and the numerous varieties of low productivity.

The Central Lake district is notable for the lack of standardization upon a leading variety, nearly all the well-known varieties being grown in commercial quantities. No official data are available as to the relative acreage of the different varieties, but it is roughly estimated by leading factors that the Concord comprises 60 per cent of the acreage, the Catawba 20 per cent, Delaware 8 per cent, Niagara 7 per cent, and others, such as the Elvira, Worden, Moore, Ives, Diamond, Agawam, and the Brighton the remaining 5 per cent.

There is probably no commercial district where insect pests cause so little damage as around the Central Lakes of New York, but fungus diseases are troublesome; black rot, downy mildew, powdery mildew, anthracnose, and chlorosis often attack the fruit and vines. These fungus diseases necessitate repeated sprayings, and in recent years they have seemed to be under better control. On account of the frequent and extensive damage to the bunches, many of the best vineyardists use packing houses, but much stock, especially in the outlying sections, is picked directly into shipping baskets. A fairly good pack is usually shipped, particularly from the Penn Yan section, where there is one factor whose shipments command a considerable premium.

Marketing Methods.

Practically all known methods of sale are practiced in this region, but the principal outlet for the grower is through local buyers or car-lot assemblers. The contract system of sales is much in vogue. Growers often sell their crop to a local buyer before it matures, agreeing to pick and deliver at the buyer's packing house for a certain stipulated price. As the growers are often ignorant of the marketing conditions while the buyer is well informed concerning them, this system frequently works to the grower's disadvantage. For instance, during 1918 growers in the Chautauqua-Erie belt were selling their Concords at $100 to $110 per ton, while some growers in the Keuka Lake section were hauling similar stock at the previously contracted price of $60 and in some cases as low as $40 per ton. Other growers in this section, who were selling to the same buyer at the market price, were receiving $90 to $95. This last price is not out of line, for Central Lakes stock, except in the case of certain well-known brands, generally sells slightly below Chautauqua and Hudson River stock.

A large amount of stock, in the aggregate, is bought on contract by outside buyers who visit this district and purchase crops at a certain definite price, which depends upon the quality of each vineyard and upon the growers's knowledge of price conditions. It might be said in passing that as a large percentage of growers is extremely ignorant of marketing conditions and practices, good stock may often be purchased in Seneca, Ontario, Schuyler, and Yates Counties at low prices; therefore many of the growers in these sections fail to realize the full market price for their product.

In the Keuka section and in the Naples Valley large amounts of this stock were formerly used for the manufacture of wine, and the closing of this outlet will undoubtedly work a severe hardship in these sections; however, some of these factories expect to engage in the manufacture of grape juice.

A much larger percentage of table stock is shipped from this district than from the Chautauqua-Erie belt, 2-quart baskets being used almost exclusively. Eight-basket crates are sometimes employed for shipping fancy table stock, such as Delawares.

Consignment by growers, in less than carload lots and also in carlots, is frequently practiced, particularly from the district around Seneca Lake. As this consignment is generally done on a haphazard basis, growers shipping to certain markets merely because they did so the year before, it is not surprising that there is frequent dissatisfaction regarding the returns.

Prohibition legislation caused more disruption in the Central Lakes district of New York than in any other of the larger grape districts outside of Ohio, and this fact, together with the rather unorganized condition of the local trade, created more interest in marketing methods and caused the organization of several cooperative associations.

Market Outlets and Distribution.

The shipments from the Central Lakes district secure a wider distribution than those from any other section in New York and are the principal source of late supplies for the eastern and southeastern cities of the United States. Concords in this section ripen from 10 days to 2 weeks earlier than those of the Chautauqua-Erie belt, and during that time there is no competition between these two districts. When the belt begins to ship heavily on the West and the Hudson River Valley is shipping on the East, shippers in the Central Lakes district are hard pressed to find an outlet for their product. It is then that the shipments find their way into the more southern markets. Later, when Michigan is out of the market, some stock is rolled to the Middle West. It is noticeable that in 1918 both the Chautauqua-Erie belt and the Central Lakes district shipped heavily to the smaller cities in Pennsylvania, these shipments being largely of stock packed in 12-quart baskets for the home manufacture of wine. Largely on account of the location and directions of the railroads in these two sections, the shipments from the belt go to western Pennsylvania and from the Central Lakes to the eastern part of the State. Also, all New York shipping sections roll stock to New England. (See Appendix.)

THE HUDSON VALLEY OF NEW YORK.

History and Description.

The production of table grapes in America first reached commercial importance in the Hudson Valley district.[5] Before 1830 a vineyard of Catawbas and Isabellas was shipping to neighboring markets. This district is notable for the extensive experimental work that was done in the early days of the industry, in the production and dissemination of new varieties. This was an undoubted

[5] See Hedrick, U. P. The Grapes of New York. Report of the New York Agricultural Experiment Station for the Year 1907, II, p. 89.

boon to the industry, but its effect upon the district was questionable, for it resulted in the planting of many acres to commercially worthless varieties. There was great expansion previous to 1890, but between that date and 1900, when competition from other districts became stronger and fungus diseases began to affect the production seriously, there was a sharp decrease in the acreage of this district.

The soil of the Hudson Valley district is variable, most vineyards being found on coarse gravelly loams, in which shale or slate predominate. Most of the grapes are grown on the hills near the river, which has a stabilizing effect upon the temperature. Without this large body of water, grape growing would be impossible in this section. As it is, the winters are often destructive.

The district comprises the counties of Columbia, Dutchess, Ulster, and Orange. Germantown, Roseton, Highland, Marlboro, Milton, and Ulster Park are the most important shipping points.

Table 4 shows the loadings at the various stations throughout the territory, as reported to the Bureau of Markets by the originating railroads and boat lines:

TABLE 4.—*Carloadings of grapes in the Hudson Valley of New York.*

	1916	1917	1918	1919		1916	1917	1918	1919
Columbia Co., Aug.-Sept.:					Ulster Co., Aug.-Oct.:				
Claverack	0	0	0	6	Clintondale	2	2	0	3
Elizaville	0	0	0	17	Esopus	9	7	10	0
Germantown	19	59	124	126	Highland	29	70	23	14
Hudson	0	0	0	5	Marlboro	98	91	114	102
					Milton	19	15	32	0
Columbia Co. total	19	59	124	154	St. Elmo	1	0	0	1
					Ulster Park	49	46	16	32
Dutchess Co., Sept.-Oct.:					West Park	9	6	13	0
Barrytown	2	3	0	7					
Cokertown	4	2	0	0	Ulster Co. total	216	237	208	152
Red Hook	0	0	0	6					
Tivoli	8	14	5	25	Unknown	0	171	187	0
Dutchess Co. total	14	19	5	38	Total loadings in Hudson Valley	276	566	573	344
Orange Co., Aug.-Oct.:									
Cedarcliff	8	25	9	0					
Newburgh	2	0	8	0					
Roseton	17	55	32	0					
Orange Co. total	27	80	49	0					

VARIETIES.

There is no commercial necessity for such a great number of varieties as are produced in this district, but because of the proximity of so many markets where small quantities of fancy stock may be sold to advantage there are many varieties left from earlier times. No official statistics are available as to the relative acreage of the different varieties, but it is roughly estimated by leading factors that the

Concord comprises 50 per cent of the acreage, the Delaware 15 per cent, Niagara 15 per cent, Worden 5 per cent, Moore 5 per cent, and others, such as the Bacchus, Pocklington, Campbell, Hartford, and the Virgemnes, the remaining 10 per cent.

Methods of Sale.

All known methods of sale are practiced, but shipment on consignment in less than carload lots by water freight is one of the most common. As the commercial vineyards are all adjacent to the river, which is navigable as far as Albany and Troy, many growers take advantage of the low freight rate and quick delivery in shipping to New York. Fruit loaded on the boat late in the evening will reach the city in time for business the next morning. The great drawback of this method is that it confines shipments to New York, Brooklyn, Albany, and Troy. The wider distribution of the products of this district is effected by the local dealers and associations.

At several points local dealers control the situation, buying the offerings of the growers and selling them in carloads "f. o. b. usual terms" or "f. o. b. cash track," preferably the latter, to their connections in outside cities.

A grape-juice factory is established at Highland, which annually consumes a large amount of stock and offers an easy outlet for the products of the vineyards.

In recent years the growers of this district have formed a cooperative association through which their products are sold. This association has been successful in disposing of its offerings to advantage, and is now one of the most important factors in this district.

Quality of Pack.

Damage by insect pests is practically negligible, but fungus diseases, particularly black rot, are often very harmful. This sometimes results in a poor pack, but on the whole the quality of the shipments from this district is good. Two-quart and 4-quart baskets are generally used, most of which are packed in the vineyard. On account of the numerous varieties commonly grown, a practice has developed of packing two or three varieties in one basket, which finds some favor with the fancy trade.

Market Outlets and Distribution.

New York is by far the heaviest receiver of Hudson Valley shipments, with Boston next in importance. Most of the remaining grapes go to the smaller cities in eastern New York State and in New England and an occasional car is shipped into Pennsylvania and

New Jersey, but because of the heavy competitive shipments from the Central Lakes and the Chautauqua-Erie belt, the prevailing shipping tendency is toward the East.

THE ONTARIO SHORE OF NEW YORK.

Location and Extent.

The Ontario shore of New York, sometimes called the Niagara district, both from the principal county and the principal variety of this section, is relatively unimportant, when compared with the Chautauqua-Erie belt and the Central Lakes district which lie near it. The acreage of the whole section has lately been on the decline, largely on account of severe winter injury.

The general topographical features of this section are similar to those of the Chautauqua-Erie belt. Although commercial shipments are made from seven different counties, the industry is not of great importance outside of Niagara County, where Lockport, Model City, and Sanborn are the most important shipping points.

Table 5 shows the loadings at the various stations throughout this section, as reported to the Bureau of Markets by the various originating railroads.

Table 5.—*Carloadings of grapes in the Ontario shore district of New York.*

	1916	1917	1918	1919
Genessee Co., Oct.:				
Pavilion	0	1	0	0
Monroe Co., Oct.:				
Brookport	3	1	0	0
Union Hill	2	0	0	0
Monroe Co. total	5	1	0	0
Niagara Co., Sept.-Oct.:				
Burt	0	1	0	0
Cambria	3	7	0	3
Elberta	6	7	3	15
Gasport	9	5	2	10
Lewiston	0	3	0	12
Lockport	67	34	25	64
Model City	28	20	20	54
Mortimer	0	3	0	0
Ransomville	6	3	1	12
Sanborn	12	9	5	43
Wilson	9	6	3	14
Niagara Co. total	140	98	59	227
Orleans Co., Sept.:				
Fancher	3	0	0	0
Holley	0	1	0	4
Medina	0	2	2	0
Millers	0	0	1	4
Orleans Co. total	3	3	3	8
Oswego Co., Sept.:				
Lacona	32	0	0	0
Wayne Co., Oct.:				
Newark	0	0	2	0
Ontario	6	5	2	17
Sodus	8	0	0	7
Wayne Co. total	14	5	4	24
Total loading for district	194	108	66	259

The yield in this section is low because the Niagara, the chief variety grown, is a light bearer. It is roughly estimated that about 80 per cent of the commercial acreage is planted to the Niagara, 10 per cent to the Concord, and that the remainder is composed of the Worden, Moore, Delaware, and other less important varieties.

There are few large plantations. In fact, this section is interesting from a commercial viewpoint merely as a shipper of Niagaras, for nowhere does this variety reach such a high quality as near Lake Ontario, and particularly in Niagara County.

Methods of Sale.

A large percentage of the sales by growers in the counties of Genesee, Monroe, Orleans, and Wayne are made direct to retailers or to city markets in the near-by cities and towns. An important outlet is the shipment in less-than-carload lots on consignment to cities within the State, as to Buffalo, Rochester, Syracuse, and Rome. Some of the sales in these counties are made through local dealers who specialize in other fruits and handle grapes only as a side line.

While there is some carlot shipping by growers, the greater part of the commercial distribution is effected by an association formed by growers for the marketing of their product. This association also handles some grapes in the Central Lakes district. The principal outlet for the carlot shipments from this district is in the large cities of the East—New York, Boston, and Philadelphia, and also in Pittsburgh.

Insect pests are not particularly troublesome in this section, but fungus diseases, especially black rot, to which the Niagara is very susceptible, does considerable damage and necessitates careful trimming in years of infection.

MICHIGAN.

Location.

While the quantity production of Michigan grapes does not equal that of New York State, nevertheless, as the shipments of table stock are heavier, the distribution more extensive, and the industry localized in a single section, southwestern Michigan may be regarded as the leading grape section of the East.

While carlot shipments have been made from 10 Michigan counties during the last three years, the industry is relatively unimportant outside the counties of Van Buren and Berrien, and reaches its highest development around the towns of Lawton, Paw Paw, and Mattawan in the former county and Benton Harbor and St. Joseph in the latter.

Table 6 shows the loading at the various stations throughout the State as reported to the Bureau of Markets by the various originating railroads.

TABLE 6.—*Carloadings of grapes in Michigan.*

	1916	1917	1918	1919
Allegan Co., Sept.:				
Fennville	6	0	0	22
Berrien Co., Sept.–Oct.:				
Baroda	69	136	9	0
Benton Harbor	257	740	603	1,255
Berrien Springs	5	12	0	21
Bridgman	52	104	17	0
Colomia	22	81	36	157
Derby	168	237	1	288
Fairland	0	12	7	0
Galien	4	1	0	1
Glendora	0	1	0	0
Harbert	0	2	1	0
Hinchman	0	27	0	0
Napier	0	59	0	0
Niles	3	6	0	21
Riverside	2	18	0	15
Royalton	0	1	0	0
St. Joseph	255	512	210	498
Sawyer	29	39	33	105
Scotdale	0	180	0	0
Sodus	38	55	51	175
Stemms	0	4	0	0
Stevensville	48	95	81	27
Vineland	0	0	6	0
Union Pier	0	1	1	0
Watervliet	2	3	1	2
Berrien Co. total	954	2,326	1,057	2,565
Cass Co., Sept.–Oct.:				
Dowagiac	5	16	5	17
Edwardsburg	1	1	0	0
Marcellus	26	0	5	34
Cass Co. total	32	17	10	51
Grand Traverse Co., Oct.:				
Traverse City	1	0	0	0
Kalamazoo Co., Oct.:				
Rix	0	2	0	0
Williams	6	7	0	6
Kalamazoo Co. total	6	9	0	6
Kent Co., Sept.:				
Belmont	0	1	0	0
Englishville	0	1	0	0
Grand Rapids	2	12	0	25
Rockford	0	2	0	3
Sparta	0	0	0	2
Kent Co. total	2	16	0	30
Mason Co., Sept.–Oct.:				
Ludington	3	0	0	0
Muskegon Co.: Oct.:				
Slocum	3	0	0	0
Ottawa Co., Sept.–Oct.:				
Grand Haven	40	28	0	1
Spring Lake	0	0	0	3
Ottawa Co. total	40	28	0	4
Van Buren Co., Sept.–Oct:				
Bangor	1	4	0	1
Breedsville	1	0	0	0
Decatur	18	28	4	25
Gobles	0	4	0	4
Hartford	15	16	7	2
Kendall	1	2	0	3
Lake Cora	0	0	4	0
Lawrence	3	12	11	18
Lawton	336	427	77	328
Mattawan	155	261	44	158
Paw Paw	272	509	254	473
South Haven	0	8	0	17
Van Buren Co. total	802	1,271	401	1,029
Unknown	0	0	169	88
Michigan State total	1,849	3,667	1,637	3,795

HISTORY.

Grape growing is a younger industry in Michigan than in the States of New York, Pennsylvania, or Ohio. According to excellent local authority, the first commercial vineyards were planted in Lawton in the early seventies. The good returns received by this pioneer planter caused others to go into the production of grapes. The acreage was at first restricted to the district around Lawton, Paw Paw, and Mattawan, but soon spread toward the south and west, including the Benton Harbor-St. Joseph district. As in the early rapid expansion of almost all commercial sections, the acreage spread toward unfavorable localities in Van Buren and Berrien Counties, including the heavy land of the south, and the lowlands. Grapes were found to be unprofitable in these places and only a few scattered and relatively unproductive plantations now remain. Thus it has been demonstrated that only on the lighter soils where good air drainage exists does grape growing prove profitable.

Severe attacks of black rot seemed to threaten the industry between 1905 and 1910 and caused the abandonment of many acres, but it was soon found that careful spraying would reduce the effects of this disease to a minimum.

The methods of commercial disposition of the crop have gone through the usual evolution. In the early days near-by markets like Chicago, Lansing, and Detroit received the bulk of the shipments, which were usually forwarded on consignment; but now the extent of distribution of Michigan's shipments and the strength of its f. o. b. market is unequaled in the grape industry of the East.

Acreage and Varieties.

No accurate or official data are available as to the present production and acreage in Michigan, but the indications are that replantings have almost, if not quite, equaled the acreage abandoned. The decrease in shipments in 1918 was due to a very light yield caused by unfavorable weather conditions, and can not be traced to any decrease in the number of vines. Substantiating this statement, local information puts the average yield per acre at $1\frac{1}{2}$ to $1\frac{3}{4}$ tons and the yield for 1918 at two-thirds to seven-eighths of a ton.

The Concord is here preeminently the leading variety, with the Champion and the Moore next in importance. The Worden, Delaware, Niagara, and other varieties are grown, but their relative importance is slight. In the absence of official statistics, well-informed local opinion places the acreage of the various varieties as follows: Concord 85 per cent, Champion 7 per cent, Moore $6\frac{1}{2}$ per cent, and others $1\frac{1}{2}$ per cent. It is interesting to note that the Champion is being replaced by the Concord to a marked extent, as progressive growers think that the Champion, which is a grape of low quality, reaching the market before any other variety, has a deleterious effect on the general consumptive demand.

The Champion usually begins to move heavily during the second week in September and cleans up in 10 days to 2 weeks. The Moore Early generally begins from 3 days to a week later, their normal season continuing about 10 days. Most of the other varieties are shipped late in September. The Concord, which comprises the main Michigan crop, begins to move in heavy volume between the middle of September and the 1st of October, and usually continues for a period of about a month.

Marketing Methods.

The highest development of grape-marketing machinery is found in Michigan, and practically the whole crop is sold on an f. o. b. basis.

COOPERATION.

Cooperative organization has reached a high state of development in this State, particularly in the grape-growing sections, and practically all the shipments from Van Buren County and many from Berrien are made through these associations.

The tendency in the growth of the cooperative movement in Michigan seems to have been first toward localization and is now toward federation. The individual associations are small and seldom control loadings at more than a few stations, thus differing markedly from some of the most successful associations in other States. The movement toward federation of these various small associations is a promising solution of the rather unfortunate spirit of competition that often arises between the individual organizations.

These small associations are usually stock companies that own their own offices and market the grapes of their members, usually on the basis of a daily pool of varieties. Most of them handle other fruits as well, and also buy baskets, twine, spray material, and even posts, hay, and feed for their members. Few of the individual associations actually sell the grapes, but confine their activities to inspection and loading, keeping accurate records of the amounts of each variety delivered daily. The usual practice is to give each member 75 or 80 per cent of the estimated market value of each day's haulings and to prorate the surplus among the members when the books are balanced at the close of the season, the returns to stockholders depending on the particular arrangements of each association.

The shipments by these small associations are sold in the main by one or the other two large agencies—the one a distributing company of national scope, which charges a brokerage fee for its services, and the other a cooperative federation of the associations themselves.

GRAPE-JUICE FACTORIES.

All of the grape-juice factories of this region are located in Van Buren County. Lawton is the center of the industry, with a smaller development at Paw Paw and Mattawan. Most of the factories buy on a standard contract which guarantees the grower the daily market price on bulk stock, with a fixed minimum. As Michigan bulk shipments are light, a daily market price on this class of stock often fails of establishment, and it is left to the juice factories to state the price for each day. These factories sometimes buy in Berrien County for shipment, but most of the stock is secured by local haulings, which fact explains the very light shipments from Lawton in 1918.

THE STREET MARKETS.

The street markets in Benton Harbor and St. Joseph constitute an interesting development in the Berrien County section. These cities are surrounded by many extensive vineyards, though in the main the individual holdings are considerably smaller than in Van Buren County. The size of these holdings, and consequently the large number of growers, probably had an important bearing on the establishment of the type of market at these points, for while in Van Buren County cooperation developed among the growers, in the street markets of Benton and St. Joseph there is found an extreme development of competition among the buyers.

The street sales form what is practically an auction market, for the farmers sell their output daily by driving to certain crowded street corners in these cities, where they receive bids for their loads. Informal regulations are agreed to; the farmers' wagons form in lines at certain corners, beyond which no buyers pass. The buyers congregate around each wagon as the line moves up and each makes a bid, the highest of which is usually accepted. However, if the grower feels that he can secure larger returns by consigning his shipment by freight or express to some city market he refuses even the highest bid and drives on to the railroad station. With this end in view, many growers address each basket with a rubber stamp to facilitate shipment.

There is much controversy as to whether the returns from cooperative associations or street sales net the greatest profit to the grower, but the observations made by this bureau in 1918 show that only for a short period, when the Champion crop was cleaning up, did the street prices to growers exceed those paid by associations. This was due in part to the better average quality of the associations' stock produced under close inspection and in part by the very nature of the business of the two types of factors, for the local buyers, who dealt on the street market, had to sell their grapes on a basis fairly comparable with the f. o. b. prices received by the associations themselves.

Usually the street prices reflect very closely the daily quotations from the tributary terminal markets, but in a few cases temporary abnormally high or low prices result from the vagaries of supply and demand. For example, on some evenings several buyers have carloads or boatloads nearly completed and bid up stock to high prices in order to secure quantity transportation rates, conversely relatively low levels often prevail because available carriers are completely loaded.

Quality of Pack.

The conditions of production on the whole are very good in this State, as careful cultivation, fertilization, pruning, and spraying are practiced. Michigan is singularly free from insect pests, but the black rot is troublesome and at times causes serious loss. Almost without exception, table stock is shipped in the 4-quart basket, which has become the standard Michigan container. The baskets are packed in the field, directly from the vines, and a good pack is generally turned out. There is much local discussion as to the relative quality of the pack of cooperative associations, of independent growers, and of the stock sold on the street markets. Usually the pack of the associations is slightly superior. The relative quality of Michigan and New York shipments is another much-discussed point, for shippers from New York claim to put up a much more fancy product. The fact that Pittsburgh and Chicago, the two most important markets where the shipments come into direct competition, consistently pay a slight premium for the New York stock would seem to corroborate this, but it is doubtful whether the difference is not more fancied than real, for while the Michigan stock has been improving in recent years, it is believed by impartial observers that the quality of the New York pack in general has been deteriorating.

The Climax baskets used in Michigan are often of coarse stock and do not present such an attractive appearance as the New York baskets. Many Michigan shippers refuse to label the baskets, although this costs only about one-fourth of a cent and usually secures a premium of 1 to 3 cents per basket. These shippers have not conducted such an active campaign of advertisement of the quality of their stock as have the New York factors. Another cause for this market preference is that many Champions, a variety of very low quality, have been shipped from Michigan. Growers have come to realize that this variety has a depressing effect on the general demand for Michigan stock and are rapidly replacing the Champion with the Concord. If those interested in the Michigan industry would pay more attention to these points, there seems no reason why the trade should not come to recognize fully the high quality of the stock from this State.

Market Outlets and Distribution.

While New York has been diverting its grapes from table stock to wine and juice manufacture during the past few years, Michigan has been developing new markets and a system of extensive and intensive distribution, unequaled in the grape industry farther east. The

shipments from this State are no longer confined to neighboring territories. Even in the short crop year of 1918 cars were rolled east to Massachusetts and New Jersey, south to Florida and Texas, and west to Idaho and Wyoming. In that year carlot shipments were made to 31 different States and to 169 different cities.

The largest market for this section is Chicago, to which much stock is carried by water freight, Berrien County occupying the same relative position to this city that the Hudson Valley district does to New York. Heavy shipments are also made by water to Milwaukee and other lakeside points.

The general tendency is to ship toward the West and South; States east of Michigan receive but a small proportion of the total shipments. Besides the adjacent States of Illinois, Wisconsin, Indiana, and Ohio, the Missouri Valley States of Iowa, Missouri, Nebraska, and Kansas are heavy receivers.

OHIO.

Location and Extent.

The number of carlot shipments that have moved out of Ohio during the past three years, as shown in Table 1, give no adequate idea of the importance of the Lake counties of this State. Ohio follows New York and Michigan in importance, and while its production is much more scattered than that of Pennsylvania, in total annual tonnage it probably excels that State. The grape sections of Ohio are, in effect, a western continuation of the vineyard section of the Chautauqua-Erie belt, and every lakeside county is a fairly heavy producer.

The proportion of the stock pressed to the stock shipped out is higher in Ohio than in any other important eastern State, and as much more of this pressed stock was used for wine than for grape juice, it is evident that in Ohio the industry is now undergoing a radical readjustment.

Lake County, of which the principal shipping point is Unionville, Cuyahoga County near Dover, Erie County near Sandusky, and Kelleys Island are the three most intensive producing sections in the State. The Sandusky section, which includes Kelleys Island, has rivaled Hammondsport, N. Y., as a center of the American champagne industry and has used for this purpose a large proportion of the Catawbas produced locally.

Table 7 shows the carloading at the various points in Ohio, as reported to the Bureau of Markets by the originating railroads.

TABLE 7.—*Carloadings of grapes in Ohio.*

	1916	1917	1918	1919
Ashtabula Co., Sept.–Oct.:				
Amboy	0	1	0	0
Ashtabula	1	0	0	0
Conneaut	3	0	0	1
Geneva	9	12	6	3
Saybrook	3	0	0	0
Ashtabula Co. total	16	13	6	4
Cuyahoga Co., Sept.–Nov.:				
Dover	31	43	0	0
Erie Co., Oct.:				
Berlin Heights	2	4	2	5
Ceylon	2	1	0	1
Vermillion	9	23	3	12
Erie Co. total	13	28	5	18
Geauga Co., Oct.:				
Chardon	1	0	0	0
Lake Co., Sept.–Nov.:				
Madison	19	18	2	10
Perry	51	48	11	32
Unionville	104	39	12	31
Lake Co. total	174	105	25	73
Lorain Co., Sept.–Oct.:				
Avon	21	16	13	7
Ottawa Co., Sept.–Oct.:				
Danbury	1	2	0	0
Gypsum	0	0	1	0
Port Clinton	0	2	4	6
Put in Bay	1	6	0	0
Ottawa Co. total	2	10	5	6
Ohio State total	258	215	54	108

ACREAGE AND VARIETIES.

Taking the State as a whole, the Concord occupies the bulk of the acreage, but in all the lake counties, particularly Erie and Sandusky, the Catawba is relatively very important. The proportion of the Delaware and the Niagara, particularly in Cuyahoga and Lorain Counties, is also larger than in most other commercial sections.

No figures are available as to the acreage or average yield, but two facts are apparent: (1) That the acreage has been materially reduced by the combined effects of the recent severe winters and the ravages of the rootworm, which is particularly destructive in many parts of the State; and (2) that the average yield is much lower than in other commercial sections, due principally to the large, partially abandoned, acreage and also in part to the large proportion of varieties, such as the Catawba, the Delaware, and the Niagara, which are relatively light yielders.

At one time grape growing assumed considerable importance in the southern part of the State along the Ohio River, but these vineyards have long ceased to figure in commercial shipments.

METHODS OF SALE AND MARKET OUTLETS.

As might be expected in a State where such a large proportion of the stock has been consumed by wine and juice factories, the contract type of sale predominates. As a general rule, these factories have not bought their required tonnage at the market price, as in New York and Michigan, but at a price agreed to early in the season, before the grapes matured. These establishments entered the market at picking time only when a short crop year cut down their pre-

viously contracted tonnage below their requirements. No small degree of dissatisfaction is felt among many of the growers over these methods.

The table-stock industry is being developed at present. Several movements are under way toward the formation of cooperative associations among the growers. These are deterred somewhat by the laws of the State, which limit the development of this type of organization to straight stock companies. An association organized on this basis in the Dover section has conducted the selling for its members very successfully, usually holding the grapes until late in the season and then selling to wine or juice factories. Large amounts of the stock are hauled in wagons and trucks to the Cleveland market, which is a heavy grape consumer. In fact, nearly all the large cities of the State receive some of their supplies from near-by growers, who sell direct to jobbers on the "street."

The distribution of Ohio shipments, most of which originate in the Unionville section, is extremely narrow. In 1918 shipments went to only seven different cities in Ohio, though 1 car each went to three neighboring cities situated in Indiana, Michigan, and Pennsylvania.

THE MIDDLE WEST.

Location of Producing Sections.

In several scattered sections of the middle western territory, grape growing is a specialized industry, but nowhere does it assume the importance that it reaches in New York, Michigan, Pennsylvania, or Ohio. In the Missouri Valley section, which comprises those parts of Buchanan County, Mo., Doniphan County, Kans., Pottawattamie County, Iowa, and Douglas County, Nebr., adjacent to the river, the grape industry of the Middle West reaches its highest commercial development, with the Ozark section of Washington County, Ark., and Newton County, Mo., and the independent sections of Lee County, Iowa, and Taney County, Mo., next in order of importance. Grapes are grown to some extent in practically all parts of the Middle West, but in few sections, other than those named above, does the industry assume much more than garden proportions.

Table 8 shows the loading of full cars at the various stations throughout this territory as reported to the Bureau of Markets by the various originating railroads.

TABLE 8.—*Carloadings of grapes by States in the Middle West.*

	1916	1917	1918	1919
MISSOURI.				
Andrew Co., Sept.:				
Amazonia	1	1	1	17
Buchanan Co., Aug.–Sept.:				
St. Joseph	17	14	1	0
Newton Co., Aug.:				
Neosho	3	9	3	21
Stark City	0	1	0	0
Newton Co. total	3	10	3	21
Taney Co., Aug.–Sept.:				
Hollister	16	8	12	5
Melva	0	0	9	0
Taney Co. total	16	8	21	5
Missouri State total	37	33	26	43
KANSAS.				
Doniphan Co., Aug.–Sept.:				
Blair	1	1	1	0
Wathena	29	37	11	33
Doniphan Co. total	30	38	12	33
Unknown	0	1	2	0
Kansas State total	30	39	14	33
NEBRASKA.				
Douglas Co., Aug.–Oct.:				
De Bolt Place	3	0	0	0
Florence	28	0	0	0
Omaha	56	2	2	4
Douglas Co. total	87	2	2	4
Nemaha Co., Aug.:				
Brownsville	2	2	0	8
Julian	1	0	0	0
Nemaha Co. total	3	2	0	8
Unknown	23	4	0	0
Nebraska State total	113	8	2	12

	1916	1917	1918	1919
IOWA.				
Des Moines Co., Aug.:				
Burlington	0	0	1	0
Harrison Co., Sept.:				
Missouri Valley	2	0	0	0
Mondamin	2	0	0	0
Harrison Co. total	4	0	0	0
Keokuk Co., Sept.:				
Gibson	1	0	0	0
Lee Co., Aug.–Sept.:				
Fort Madison	2	12	1	1
Keokuk	1	1	0	0
Montrose	57	42	51	102
Sandusky	0	1	0	0
Lee Co. total	60	56	52	103
Pottawattamie Co., Aug.–Sept.:				
Council Bluffs	77	26	2	53
Wapello Co., Sept.:				
Ottumwa	1	1	0	0
Unknown	0	3	13	0
Iowa State total	143	86	68	156
TENNESSEE.				
Sumner Co., Aug.:				
Hendersonville	1	0	0	0
ARKANSAS.				
Franklin Co., Aug.:				
Altus	3	0	0	0
Sevier Co., Aug.:				
Gillham	0	0	0	1
Washington Co., Aug.–Sept.:				
Springdale	0	0	0	15
Tontitown	12	0	0	0
Washington Co. total	12	0	0	15
Unknown	0	8	9	0
Arkansas State total	15	8	9	16

ACREAGE AND VARIETIES.

The standard varieties are the Concord, the Worden, and the Moore Early, but a small acreage of almost all the other leading varieties is found. As usual, the Concord leads, comprising from 75 to 85 per cent of the shipments. As this is preeminently an early section, the best prices usually being realized before the Michigan crop comes on with its heavy shipments, there is a large proportion of the early varieties, and the Worden and the Moore assume a greater relative importance than in New York or Michigan. The date of ripening varies somewhat in this section because of the difference in latitude, but the main shipping season of the Moore Early and the Worden is from the middle of August to the first week in

September. The Concord generally begins to move heavily about September 1 and is usually cleaning up in the third week. In a normal season the heaviest shipments are between September 10 and 18.

No definite, up-to-date figures on the commercial acreages in this section are available, but a comparison of the carlot shipments from these four States (see Table 1) with the shipments of New York and Michigan will show the position it holds in the industry. The severe winters of 1916–17 and of 1917–18 played havoc with the vineyards in the northern part of this territory. The acreage in the section of Council Bluffs and Omaha is at present only about 35 per cent of that of three years ago. However, many vineyards are being replanted, so that the industry in this section may, in time, reach its former importance. Farther south, along the Missouri River, in the St. Joseph-Wathena section, the damage is not so marked, as 65 per cent of the former acreage survives. In the Ozarks the industry is proving profitable and shows a steady increase in acreage, and in other sections the replantings approximate the acreage abandoned each year.

As in all such cases, these reductions of acreage served to put the industry on a firmer basis, for the vineyards receiving the best attention were the ones that survived. The average yield per acre is relatively high in the better developed sections of this territory, running from 2 to 2¾ tons per acre in a good crop year along the Missouri River and from 1¾ to 2½ tons per acre in the Ozark section.

Usual Methods of Sale.

Less-than-carload shipments assume greater relative importance in this territory than in other commercial sections, as much stock is shipped on consignment to the many cities within a radius of a few hundred miles. A considerable tonnage produced near the cities of Omaha, Kansas City, or St. Louis is hauled direct to market by the farmers. The most important commercial fact about this section is that its shipments reach the markets at a time when they encounter no competition from Michigan or New York stock and at a time when the consuming public is beginning to ask for grapes. In the leading sections an f. o. b. trade has been built up and most of the carlot shipments are sold on the basis of "cash track" or of "usual terms."

In the section of Council Bluffs and Omaha the deal is practically in the growers' hands, as a cooperative association controls a large part of the acreage. In the other sections the bulk of the shipments are handled by local buyers, who, in turn, make sales on an f. o. b. basis whenever possible.

Market Outlets and Distribution.

The general tendency is to ship toward the North and West, but shipments commonly go as far east as Detroit and as far south as Oklahoma and Texas. Minnesota, Iowa, Kansas, Nebraska, and Missouri receive the bulk of their early supplies from the Missouri Valley and the Ozark sections, and shipments often reach points in Colorado, Montana, and the Dakotas. During 1918, a short-crop year, data furnished to the Bureau of Markets by the various originating railroads show that the shipments from Missouri, Iowa, Kansas, and Arkansas reached 13 States and 36 different cities. (See Appendix.)

THE ATLANTIC STATES.

Location of Producing Sections.

Grapes are grown in almost every county of the Atlantic States, but in only a few sections are they produced in quantities large enough to furnish carlot shipments. A few scattered carloads are shipped out of New Jersey, Virginia, and North Carolina, but in no eastern States except New York and Delaware does grape production assume the proportions of a specialized industry.

Table 9 shows the full carloadings at different stations throughout this territory, as reported to this bureau by the various originating railroads.

Table 9.—*Carloadings of grapes by States in the East.*

	1916	1917	1918	1919
NEW JERSEY.				
Atlantic Co., Sept.:				
Landisville	3	0	0	0
Camden Co., Sept.:				
Lindenwold	0	3	0	0
Monmouth Co., Sept.:				
Hazlet	2	0	0	0
Middletown	0	1	1	0
New Jersey State total	5	4	1	0
DELAWARE.				
Kent Co., Aug.-Sept.:				
Clayton	23	45	13	11
Dover	0	0	11	0
Felton	0	0	2	0
Hartly	1	0	0	0
Milford	0	1	0	0
Wyoming	10	23	13	2
Delaware State total	34	69	39	13
VIRGINIA.				
Greenesville Co., Aug.:				
Emporia	2	0	0	0
NORTH CAROLINA.				
Martin Co., Sept.:				
Everetts	9	0	0	0
Moore Co., July:				
Aberdeen	3	0	0	0
Southern Pines	1	0	0	0
North Carolina State total	13	0	0	0

Varieties.

The States of Delaware and New Jersey furnish early supplies to the eastern markets. The standard varieties—the Concord, Niagara, Delaware, Catawba, Worden, and Champion—make up the bulk of the acreage; but the Ives, Wyoming, Diamond, Lindley, and Goethe

are sometimes shipped. All of these varieties are grown to a limited extent from Maine to the Gulf. Muscadine grapes are produced rather extensively in the coastal regions of Virginia and North Caroline, and to a small extent throughout the other Southern States, the Scuppernong being the best known variety.

Market Outlets.

In the New England States the proportion of shipments to local haulings is low, as much attention is paid to the production of early fancy stock. New Jersey and Delaware growers have the important markets of Philadelphia, New York, Newark, and Baltimore practically at their doors. A large proportion of the stock sent to these markets is shipped by the growers in less than carload lots on commission, though at some of the larger shipping points in Delaware local dealers occupy a more important place in the deal. They assemble the offerings of the growers in carload lots and ship them to large terminal markets, and are thus enabled to secure a wider distribution than by less than carload shipments. It is estimated that the acreage in Delaware has been reduced between 30 and 50 per cent during recent years. The Muscadine deal in the South constitutes a unique development that does not fall within the scope of this study.

THE NORTHWEST.

Many of the attempts to grow grapes in the Northwest have resulted in failure, but the industry has become well established in several localities, especially in the Yakima Valley.

Table 10 shows the full carloadings at different stations as reported to this bureau by the various originating railroads.

Table 10.—*Carloadings of grapes by States in the Northwest.*

	1916	1917	1918	1919
WASHINGTON.				
Benton Co., Sept.:				
Kennewick	1	0	1	0
Prosser	0	0	6	10
Vista	0	2	0	0
Benton Co. total	1	2	7	10
Snohomish Co., Sept.:				
Everett	0	0	0	1
Walla Walla Co., Sept.-Oct.:				
Wallula	0	2	0	0
Whatcom Co., Aug.-Oct.:				
Grandview	0	15	5	13
Yakima Co., Oct.:				
Granger	5	4	8	12
Selah	6	5	3	1
Sunnyside	0	0	0	5
Wapato	0	0	3	4
Yakima	17	7	7	11
Zillah	1	1	1	4
	29	17	22	37
WASHINGTON—contd.				
Unknown	0	0	25	0
Washington State total	30	36	59	61
IDAHO.				
Gem Co., Sept.-Oct.:				
Emmett	0	5	4	3
Bannock Co., Oct.:				
Pocatello	0	1	0	0
Idaho State total	0	6	4	3
OREGON.				
Josephine Co., Oct.:				
Grants Pass	0	2	0	3
Unknown	0	0	2	0
Lane Co., Oct.:				
Eugene	0	0	1	0
Umatilla Co., Oct.:				
Hermiston	0	0	0	1
Oregon State total	0	2	3	4

As far as the American grape industry goes, the Northwest is self-sufficing, as very few shipments from the outside go into this section and practically all of the stock produced in Washington, Idaho, and Oregon is consumed within the borders of those States.

As in other important American grape-growing sections, the Concord is the leading variety, but the Niagara, Delaware, Goethe, and Catawba are also found, the Catawba extending southward into California. Because the large city markets in this section are far removed from any other section which ships American grapes, outside competition is eliminated and the local stock moves easily at satisfactory prices.

The great bulk of the shipments consist of table stock, which is usually shipped in 4-quart Climax baskets, but a juice factory located at Kennewick, Wash., offers an outlet for much local stock and also receives carlot shipments.

MARKET PREFERENCE.

It is a well-recognized fact that different markets often have wide divergent preferences both as to container and as to varieties of the stock they demand, and as the shipment of table grapes will undoubtedly be increased by the suspension of wine manufacture, the preferences of various markets become an important subject to growers and shippers. This preference is usually the result of custom, in that the trade and the consumer have become accustomed to purchase certain varieties in certain-sized containers and will not purchase stock with which they are not familiar, except at a discount. Whether the quantity of bulk stock used in the consuming centers will continue to bear the same relation to the movement of table stock that it has in the past, is highly problematical.

Chicago is, next to New York, probably the heaviest individual receiver of eastern grapes, and the bulk stock passing through this market has nearly equaled the amount of table stock. By far the heaviest receipts upon this market are of Michigan stock, much of which is shipped in by water. Undoubtedly the fact that Michigan uses 4-quart baskets almost exclusively for table stock has led to a marked preference for that type of container, so that the 2-quart package is in very poor demand on this market and sells much below the usual proportionate price of these two sizes in other cities. The standard blue varieties, the Champion, the Moore, and the Concord, are the favorites, in season, the first named selling at the usual marked discount when in competition with other varieties. The Delaware and the Niagara meet a good but very limited demand and command a slight premium when in light supply, which is quickly wiped out by the arrival of any considerable quantity. This

market appreciates stock of good appearance and makes more distinction between labeled and unlabeled stock than most cities. New York grapes generally command a slight premium over Michigan grapes of the same class.

Pittsburgh has been an important distributing center for bulk stock, particularly that originating in the Chautauqua-Erie belt. A strong preference exists for 4-quart and 12-quart baskets, the latter having been used almost exclusively for wine, which in this district was mostly homemade. This market makes little or no distinction between varieties, except that it is markedly indifferent to the Catawba, which can scarcely be moved in any volume. New York stock generally receives a slight premium here.

The New York city market receives more varieties and types of containers than any other. Two-quart and 4-quart baskets for table stock, 12-quart baskets and return trays for bulk stock, are all in good demand, but the gift case is most easily moved. Probably because New York has received heavy supplies of various varieties from the Hudson Valley and Central Lakes districts of the State, the trade and consumers have learned the use of the different kinds, so that there is very little price differential between the Concord, Niagara, Delaware, and Catawba. The Champion and the Moore Early generally sell at a slight discount. The demand for Catawbas is not good until the other varieties are gone; then they can be moved in relatively large quantities.

Philadelphia has been a heavy receiver of bulk stock, most of which went into wine; the ratio of this type of stock to table stock has been about $2\frac{1}{2}$ to 1. For table stock the 2-quart basket is much preferred, and the 4-quart package sells below the usual proportionate price of these two sizes in other cities. The Concord is the most popular grape and commands a premium over the Niagara and the Delaware if the latter are present in large quantities. Philadelphia is not a Catawba market and it is difficult to move this variety.

Boston is a good market for fancy stock. Delawares generally command a premium of 0.5 to 1 cent per basket, though the Niagaras usually bring less than Concords until late in the season when the former variety is disappearing. It is said that there has been no demand for the Catawbas except for wine-making purposes. This market is partial to both 2-quart and 4-quart baskets, and these containers usually sell at about the average proportionate price.

Baltimore and Washington are similar in their market preferences. They are predominately table-stock consumers and demand the 2-quart package. The demand for bulk grapes is relatively limited, and it is rather difficult to move any large number of 4-quart baskets. In normal years the Niagara commands a premium of 1 to

2 cents on a small basket over the Concord, and the Delaware a premium of 2 to 3 cents. There is usually a good demand for Catawbas, especially when the Concords grow scarce. The Appendix gives no adequate idea of the importance of these two markets, both of which were undersupplied in 1918.

Cleveland and Buffalo have similar market preferences, both being located near important producing sections and receiving the majority of their supplies by local haulings in wagons and motor trucks. The former city has a preference for the 2-quart baskets, but Buffalo makes no great distinction between 2-quart and 4-quart baskets. Both cities have been heavy consumers of bulk stock, and Cleveland is interested in the grape-preserve industry. These two cities use various varieties; the Delaware usually commands a marked premium over the Concord, the Niagara a slight premium; the demand for the Catawba is good, especially late in the season.

Minneapolis, St. Paul, and Fargo are good markets for grapes, and their consumption of table stock is relatively large. The standard varieties are the Champion, the Moore, and the Concord. The Concord generally commands a premium of 3 to 5 cents per 4-quart basket when in competition with the others. For blue varieties, the great majority of which are shipped from Michigan, the 4-quart basket is the standard container, though the 2-quart is the accepted container for Catawbas, which meet only a fair demand in these cities.

Detroit receives the bulk of its supplies from the neighboring Michigan producing sections and has therefore become accustomed to the use of blue varieties in 4-quart baskets and has developed a preference for this class of stock. However, sometimes, as in 1918, New York Concords, packed in 2-quart baskets, when in competition with Michigan stock in fours, sells above the usual proportionate price of these two sizes in other cities. A limited amount of the Delaware and the Niagara usually command a slight premium, which is quickly wiped out by any increased quantity of these varieties. The Catawba finds a very limited demand in this market, until late in the season, at which time this variety can be moved in moderate quantities.

Cincinnati, Columbus, and Indianapolis receive their early supplies almost exclusively from Michigan and their late supplies from New York. Therefore there is a marked preference for the blue varieties—the Champion, the Moore, and the Concord—in 4-quart baskets, and for the later red varieties, such as the Delaware and the Catawba, in 2-quart baskets. The demand for the Catawba is fairly good, especially in Indianapolis, where this variety commands a premium of several cents per 2-quart basket even over the Concord.

St. Louis, Kansas City, Des Moines, Oklahoma City, Omaha, and Denver receive considerable home-grown stock very early in the season, but the larger part of their supply is furnished by Michigan. The standard blue varieties packed in 4-quart baskets are desired by the trade, and little other stock appears on these markets. A very limited quantity of Catawbas may be moved late in the season.

In the southern markets—Jacksonville, Atlanta, Birmingham, Memphis, Fort Worth, Dallas, Houston, and New Orleans—there is no marked preference between the 2-quart and 4-quart baskets. Shipments to these cities, shown in the Appendix, give no adequate idea of their consuming capacity, as the short crop of 1918 restricted the distribution to markets nearer the producing sections. None of these markets can stand heavy receipts without a proportionately marked drop in prices, but in the aggregate they represent an important outlet which should receive more attention. While the Concord is the most popular grape in these cities, there is not so much prejudice against red varieties as there is farther north.

In the cities of the far West—Spokane, Seattle, Portland, Butte, San Francisco, and Los Angeles—the receipts of grapes of European varieties from California far exceed those of American varieties or Eastern grapes. However, some Catawbas are raised in California and find their way into the markets of Los Angeles and San Francisco, usually in 4-basket crates, and the other cities are supplied by Washington with the Concord type of grapes. While Michigan grapes have been shipped to the more northern of these cities, the great bulk of the arrivals in Portland, Spokane, Seattle, and Butte are shipped from neighboring producing sections, principally the Yakima Valley. The Concord is the favorite grape of this type in these markets, though other varieties usually sell well, and the 4-quart basket is the common container, except in Portland, where 2-quart baskets are used almost exclusively.

DISTRIBUTION.

THE PRINCIPLES.

No phase of marketing perishable products is more important, or holds greater possibilities for improvement, than the distribution of shipments. It should be the aim of all shippers to supply adequately the demand in neighboring consuming centers, up to the point where further supplies would cause disastrous clogging of the channels of trade. At this point or, under ideal conditions, just before this point is reached, shipments would be made to other cities more distant from the point of origin, even though higher freight rates render such shipments relatively less profitable.

THE PRACTICES.

Until comparatively recent years indiscriminate consignment to the nearest large cities was the rule, but with the development of f. o. b. selling, much more attention is rightly being paid to the 1, 2, and 3 car towns. The table given in the Appendix shows the present stage of this development. A study of the relative populations in the different destinations, shown in this table, will reveal the fact that some markets are relatively oversupplied and others greatly undersupplied, but it will be noticed also that this situation seems to bear definite relation to the distance of these centers of population from the producing sections supplying them. For example, in 1918 Baltimore, a city of over 500,000 population, received 24 cars of grapes, while Cleveland, which is only slightly larger, received 75 straight cars, besides heavy less-than-carload receipts and local haulings.

CONCLUSION.

A careful consideration of the facts presented in this study will convince the thoughtful reader that there is no universal panacea for marketing difficulties. Success in marketing the grape crop can come only when all those connected with the industry work efficiently in the production, preparation, and distribution of their product.

The vineyardist should devote his attention to the production of the varieties demanded by the trade in his section, should guard against picking his crop either too early or too late, should pay particular attention to putting out a good, full, honest pack, free from diseased berries or clusters, and should choose his marketing agency, be it local buyer, grape-juice factory, or cooperative association, with care and with due consideration of the relative economic efficiency of these various types of factors.

The shipper should devote special attention to the intensive and extensive distribution of the crop, should supply the various markets with the varieties in the containers they require, and should do everything in his power to prevent inequalities in the supply on the various terminal markets.

The city handlers, of all the various types from carlot receiver to retailer, should strive to effect the uninterrupted passage of the grapes from car door to the consumer and should make special efforts to increase the consumptive demand when supplies begin to accumulate.

If these most fundamental principles are carefully followed, and they are being followed more and more every year, there is no reason why the grape industry should not continue to be a very profitable one to all concerned.

APPENDIX.

DESTINATIONS OF GRAPES.

The data here given are compiled from the daily reports of shipments made by the carriers in connection with the telegraphic market news service of the Bureau of Markets. In the case of grapes, the practice of diverting en route is relatively so limited that no provisions were made to record the changes from the original billing, but it is doubted if this will seriously affect the accuracy of these statistics. The unit in the following table is a full carload, which varies from 18,000 to 25,000 pounds. The shipments to each city are segregated by States, and, in some cases, as in New York, by sections. Centers of grape-juice factory production, where it is probable that the great majority of the receipts were used for that purpose, are indicated by a star (*), as *Brockport. The receiving markets are listed alphabetically in the first column of the table, while the producing areas, in which the shipments originated, are given at the heads of the vertical columns. The total number of cars destined to each market appears in the column at the extreme right.

Destinations of carlot shipments of eastern grapes from each important producing section.

Destination.	New York, Ontario shore.	New York-Pennsylvania, Chautauqua-Erie belt.	New York, Central Lakes.	New York, Hudson River.	Michigan.	Ohio.	Kansas.	Iowa.	Arkansas.	Missouri.	Delaware.	Washington.	Others.	Total.
Aberdeen, S. Dak.	....	....	....	....	8	....	....	2	....	....	....	....	....	10
Akron, Ohio	....	5	....	....	2	....	....	....	....	....	....	....	....	7
Albany, N. Y	....	....	5	29	....	....	....	....	....	....	....	....	....	34
Albert Lea, Minn	....	....	....	....	3	....	....	....	....	....	....	....	....	3
Allentown, Pa	....	1	13	....	....	....	....	....	....	....	....	....	....	14
Altoona, Pa	....	....	....	....	....	....	....	....	....	....	2	....	....	2
Amarillo, Tex	....	....	....	....	3	....	....	....	....	....	....	....	....	3
Amsterdam, N. Y	....	....	....	4	....	....	....	....	....	....	....	....	....	4
Anderson, Ind	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Appleton, Wis	....	....	....	....	4	....	....	....	....	....	....	....	....	4
Ashland, Wis	....	....	....	....	4	....	....	....	....	....	....	....	....	4
Ashtabula, Ohio	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Atchison, Kans	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Atlanta, Ga	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Auburn, Me	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Augusta, Ga	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Aurora, Ill	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Austin, Minn	....	....	....	....	2	....	....	....	....	....	....	....	....	1
Austin, Tex	....	....	....	....	1	....	....	....	....	....	....	....	....	1

Destinations of carlot shipments of eastern grapes from each important producing section—Continued.

Destination.	New York, Ontario shore.	New York-Pennsylvania, Chautauqua-Erie belt.	New York, Central Lakes.	New York, Hudson River.	Michigan.	Ohio.	Kansas.	Iowa.	Arkansas.	Missouri.	Delaware.	Washington.	Others.	Total.
Austinburg, Ohio	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Baltimore, Md	....	3	21	....	....	....	....	....	....	....	....	....	....	24
Bay City, Mich	....	....	....	....	6	....	....	....	....	....	....	....	....	6
Beatrice, Nebr	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Belleville, Ohio	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Bellevue, Pa	....	10	....	....	....	....	....	....	....	....	....	....	....	10
Bellingham, Wash	....	....	....	....	....	....	....	....	....	....	....	1	....	1
Bellington, Ill	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Beloit, Kans	....	....	....	....	....	....	2	....	....	....	....	....	....	2
Bemidji, Nebr	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Bethlehem, Pa	....	....	2	....	....	....	....	....	....	....	....	....	....	2
Binghamton, N. Y	....	....	2	4	....	....	....	....	....	....	....	....	....	6
Birmingham, Ala	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Bismark, N. Dak	....	....	....	....	2	....	....	1	....	....	....	....	....	3
Bluefield, W. Va	....	1	1	....	....	....	....	....	....	....	....	....	....	2
Blue Island, Ill	....	....	....	....	11	....	....	....	....	....	....	....	....	11
Boise, Idaho	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Boston, Mass	....	91	37	119	1	....	....	....	....	....	....	....	1	249
Bradenville, Pa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Bradford, Pa	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Brainsburg, Pa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Bridgeport, Conn	....	3	....	....	....	....	....	....	....	....	....	....	....	3
Bridgeton, Pa	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Brighton, Mass	....	....	4	....	....	....	....	....	....	....	....	....	....	4
Bristol, Pa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
*Brockport, N. Y	1	....	87	....	....	....	....	....	....	....	....	....	....	88
Brockwayville, Pa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
*Brocton, N. Y	....	10	....	....	1	....	....	....	....	....	....	....	....	11
Brooklyn, N. Y	....	33	1	....	....	....	....	....	....	....	....	....	....	34
Brunswick, S. Dak	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Buffalo, N. Y	....	12	3	....	....	....	....	....	....	....	....	....	....	15
Burlington, Ia	....	....	....	....	6	....	....	2	....	....	....	....	....	8
Burlington, Vt	....	....	3	....	....	....	....	....	....	....	....	....	....	3
Burton, Ohio	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Butte, Mont	....	....	....	....	....	....	....	....	....	....	....	4	....	4
Cairo, Ill	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Cambridge, Mass	....	1	....	....	....	....	....	....	....	....	....	....	....	1
*Canajoharie, N. Y	....	....	13	....	....	....	....	....	....	....	....	....	....	13
Canton, Ohio	....	5	....	....	....	....	....	....	....	....	....	....	....	5
Casper, Wyo	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Caywood, N. Y	....	....	2	....	....	....	....	....	....	....	....	....	....	2
Cedar Rapids, Iowa	....	....	....	....	1	....	....	1	....	....	....	....	....	2
Centerville, Iowa	....	....	....	....	....	....	....	3	....	....	....	....	....	3
Century, W. Va	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Cincinnati, Ohio	....	1	6	....	52	....	....	....	....	....	....	....	....	59
Charleroi, Pa	....	1	1	....	....	....	....	....	....	....	....	....	....	2
Charleston, S. C	....	....	3	....	....	....	....	....	....	....	....	....	....	3
Charleston, W. Va	....	1	....	....	9	....	....	....	....	....	....	....	....	10
Cheyenne, Wyo	....	....	....	....	5	....	....	....	....	....	....	....	....	5
Chicago, Ill	....	33	2	....	340	....	....	....	....	1	....	....	....	376
Clarksburg, W. Va	....	....	....	....	4	....	....	....	....	....	....	....	....	4
Cleveland, Ohio	....	12	8	....	22	33	....	....	....	....	....	....	....	75
Clinton, Ind	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Coalgate, Okla	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Coffeyville, Kans	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Cogswell, N. Dak	....	....	....	....	....	....	....	....	....	....	....	1	....	1
Collingswood, N. J	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Colorado Springs, Colo	....	1	....	....	1	....	....	....	....	....	....	....	....	2
Columbia, Mo	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Columbia, S. C	....	....	5	....	....	....	....	....	....	....	....	....	....	5
Columbus, Ohio	....	4	....	....	13	....	....	....	....	....	....	....	....	17
Cortland, N. Y	....	....	2	....	....	....	....	....	....	....	....	....	....	2
Crawford, Nebr	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Crookston, Minn	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Cumberland, Md	....	2	....	....	1	....	....	....	....	....	....	....	....	3
Danville, Pa	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Davenport, Iowa	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Dayton, Ohio	....	....	....	....	11	....	....	....	....	....	....	....	....	11
Deadwood, S. Dak	....	....	....	....	3	....	....	....	....	....	....	....	....	3
Denver, Colo	....	6	2	....	19	....	4	....	....	1	....	....	....	32
Des Moines, Iowa	....	1	....	....	18	....	....	....	....	....	....	....	....	19

Destinations of carlot shipments of eastern grapes from each important producing section—Continued.

Destination.	New York, Ontario shore.	New York-Pennsylvania, Chautauqua–Erie belt.	New York, Central Lakes.	New York, Hudson River.	Michigan.	Ohio.	Kansas.	Iowa.	Arkansas.	Missouri.	Delaware.	Washington.	Others.	Total.
Detroit, Mich	....	17	2	....	89	1	....	....	....	....	....	....	....	109
Devils Lake, N. Dak	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Dubois, Pa	....	7	....	....	....	....	....	....	....	....	....	....	....	7
Dubuque, Iowa	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Duluth, Minn	....	....	....	....	24	....	....	4	....	....	....	....	....	28
Dunkirk, N. Y	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Eau Claire, Wis	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Egg Harbor, N. J	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Elizabeth, N. J	....	....	2	....	....	....	....	....	....	....	....	....	....	2
Emporia, Kans	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Enid, Okla	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Erie, Pa	....	7	....	....	....	....	....	....	....	....	....	....	....	7
Escanaba, Mich	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Estherville, Iowa	....	....	....	....	3	....	....	....	....	....	....	....	....	3
Evansville, Ind	....	....	....	....	7	....	....	....	....	....	....	....	....	7
Everett, Wash	....	....	....	....	....	....	....	....	....	....	....	2	....	2
Fairville, Pa	1	....	....	....	....	....	....	....	....	....	....	....	....	1
Fargo, N. Dak	....	....	....	....	15	....	....	1	....	....	....	....	....	16
Farrell, Pa	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Flint, Mich	....	....	....	....	4	....	....	....	....	....	....	....	....	4
Forest City, Pa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Fort Dodge, Iowa	....	....	....	....	4	....	....	....	....	....	....	....	....	4
Fort Scott, Kans	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Fort Smith, Ark	....	....	....	....	3	....	....	....	4	....	....	....	....	7
Fostoria, Ohio	....	1	....	....	....	....	....	....	....	....	....	....	....	1
*Fredonia, N. Y	....	22	....	....	....	....	....	....	....	....	....	....	....	22
Freeport, Ill	....	....	....	....	3	....	....	....	....	....	....	....	....	3
*Fremont, Ohio	....	....	....	....	5	2	....	....	....	....	....	....	....	7
Fulton, N. Y	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Geneseo, N. Y	....	....	2	....	....	....	....	....	....	....	....	....	....	2
Germantown, Ohio	....	3	....	....	....	....	....	....	....	....	....	....	....	3
Glasgow, Mont	....	....	....	....	....	....	....	....	....	....	....	1	....	1
Glenns Falls, N. Y	....	....	....	2	....	....	....	....	....	....	....	....	....	2
Grand Forks, N. Dak	....	....	....	....	8	....	....	3	....	....	....	....	....	11
Grand Island, Nebr	....	....	....	....	13	....	4	2	....	....	....	....	....	19
Grand Junction, Colo	....	....	....	....	....	....	....	....	....	....	....	1	....	1
Grand Rapids, Mich	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Great Falls, Mont	....	....	....	....	....	....	....	1	....	....	....	1	....	2
Green Bay, Wis	....	....	....	....	5	....	....	....	....	....	....	....	....	5
Greensboro, N. C	....	....	5	....	....	....	....	....	....	....	....	....	....	5
Greensburg, Pa	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Greenville, Pa	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Guthrie, Okla	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Hammond, Ind	....	....	....	....	10	....	....	....	....	....	....	....	....	10
Hancock, Mich	....	....	....	....	5	....	....	....	....	....	....	....	....	5
Hannibal, Mo	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Harrisburg, Pa	....	....	3	....	1	....	....	....	....	....	....	....	....	4
Harrisonburg, Ill	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Hartford, Conn	....	....	3	....	....	....	....	....	....	....	....	....	....	3
Hastings, Nebr	....	....	....	....	4	....	....	....	....	....	....	....	....	4
Haverhill, Mass	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Hays, Kans	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Hazelton, Pa	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Helena, Mont	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Henrietta, Mo	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Herminie, Pa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
High, Iowa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
*Highland, N. Y	....	36	36	....	....	....	....	....	....	....	....	....	....	72
Hinton, W. Va	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Holdridge, Nebr	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Houghton, Iowa	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Huntington, W. Va	....	4	....	....	2	....	....	....	....	....	....	....	....	6
Hurley, Wis	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Huron, S. Dak	....	....	....	....	4	....	....	....	....	....	....	....	....	4
Hutchinson, Kans	....	....	....	....	10	....	....	1	....	....	....	....	....	11
Idaho Falls, Idaho	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Independence, Kans	....	....	....	....	2	....	....	....	....	1	....	....	....	3
Indianapolis, Ind	....	8	2	....	55	....	....	....	....	....	....	....	....	65
Ironwood, Mich	....	....	....	....	1	....	....	....	....	....	....	....	....	1

Destinations of carlot shipments of eastern grapes from each important producing section—Continued.

Destination.	New York, Ontario shore.	New York-Pennsylvania, Chautauqua-Erie belt.	New York, Central Lakes.	New York, Hudson River.	Michigan.	Ohio.	Kansas.	Iowa.	Arkansas.	Missouri.	Delaware.	Washington.	Others.	Total.
Ithaca, N. Y.			1											1
Jacksonville, Fla.					1									1
Jersey City, N. J.		1	10											11
Johnstown, Pa.		8												8
Joliet, Ill.					1									1
Joplin, Mo.		1			3									4
Kane, Mo.		3												3
Kansas City, Mo.			1		20		2			10				33
*Kennewick, Wash.												11		11
Kensington, Kans.					2									2
Keystone, W. Va.					1									1
Kingston, N. Y.			1											1
Knoxville, Tenn.		1			1									1
LaCrosse, Wis.					6			1						7
Lansing, Mich.					1									1
*Lawton, Mich.					17									17
Lincoln, Nebr.					22				1	2				25
Little Falls, N. Y.		1												1
Little Rock, Ark.					9				2	2				13
Livingston, Mont.												1		1
Logansport, Ind.					2									2
Louisville, Ky.		3	4		23									30
Lynchburg, Va.		1	4											5
McCalister, Okla.					4			2						6
McKeesport, Pa.		1												1
McPherson, Kans.					1									1
Madison, Wis.					4									4
Malone, N. Y.				2										2
Manchester, N. H.				1										1
Manchester, N. Y.			1											1
Manhattan, Kans.					1									1
Mankato, Minn.					9									9
Marion, Ohio.			1		2									3
Marshalltown, Iowa					2									2
Marshfield, Wis.					4									4
Mason City, Iowa					5			5						10
*Mattewan, Mich.					11									11
Meadville, Pa.		2												2
Memphis, Tenn.		28			3									31
Menominee, Mich.					5									5
Middletown, N. Y.		1		2										3
Milwaukee, Wis.	3	2	2		53									60
Minneapolis, Minn.			2		114			18		2		1		137
Minot, N. Dak.					5									5
Mitchell, S. Dak.					5									5
Montclair, N. J.		1	1	2										4
Mount Carmel, Pa.			1											1
Muskogee, Okla.					2									2
Nashville, Tenn.			1		5									6
Newark, N. J.		9	41	1	1									52
New Britain, Conn.			4											4
New Bedford, Mass.				3										3
New Castle, Pa.		5												5
New Richmond, Ohio			1											1
New York, N. Y.	3	46	50	320	4									423
Nottingham, Ohio.						1								1
North Adams, Mass.			3	5										8
*North East, Pa.		51			20									74
Ogdensburg, N. Y.		1	1	3										5
Oil City, Pa.		3												3
Oklahoma City, Okla.					9				1					10
Olean, N. Y.		5												5
Oelwein, Iowa					10			1						11
Omaha, Nebr.					31									31
Oshkosh, Wis.					4									4
Ottawa, Kans.					1									1
Ottumwa, Iowa					2									2
Painesville, Ohio.		1												1
Palmerton, Pa.		2												2
Paris, Ill.					2									2

Destinations of carlot shipments of eastern grapes from each important producing section—Continued.

Destination.	New York, Ontario shore.	New York-Pennsylvania, Chautauqua-Erie belt.	New York, Central Lakes.	New York, Hudson River.	Michigan.	Ohio.	Kansas.	Iowa.	Arkansas.	Missouri.	Delaware.	Washington.	Others.	Total.
Parsons, Kans.					2									2
Passaic, N. J.			5											5
Paterson, N. J.			8											8
Peckville, Pa.			3											3
Peoria, Ill.		2												2
Petersburg, Va.			1											1
Philadelphia, Pa.	3	59	65	2							18			147
Pipestone, Minn.					1									1
Pittsburg, Kans.		1			2									3
Pittsburgh, Pa.	12	217	21		37						5			292
Pittsfield, Mass.		1												1
Pocatello, Idaho.					1							1		2
Portland, Me.			6	5										11
Portland, Oreg.													2	2
Providence, R. I.		9	5	6										20
Pueblo, Colo.					8									8
Racine, Wis.					2									2
Reading, Pa.			3											3
Ridgeway, Pa.		1												1
Richland, Pa.		1												1
Richmond, Va.		1	13											14
*Ripley, N. Y.		13												13
Rochester, Minn.					4									4
*Rochester, N. Y.	1		35											36
Rockford, Ill.					3									3
Roslyn, Wash.												1		1
Rugby, N. Dak.					1									1
Rutland, Vt.				1										1
Saco, Me.				1										1
St. Joseph, Mo.					2		1							3
St. Louis, Mo.			1		58			2						61
St. Paul, Minn.					25			6						31
Salina, Kans.					8			1						9
Salt Lake City, Utah												1		1
*Sandusky, Ohio		2	1			6								9
Savannah, Ga.			1											1
Savona, N. Y.			1											1
Schenectady, N. Y.		2		5										7
Scotts Bluff, Nebr.								1						1
Scottsburg, Nebr.					1									1
Scranton, Pa.			8											8
Seaside, N. J.		2												2
Seattle, Wash.												12		12
Sharon, Pa.		3												3
Shawnee, Okla.					1									1
Sheboygan, Wis.					2									2
Sheridan, Wyo.					2									2
*Silver Creek, N. Y.		2												2
Sioux City, Iowa					25					1				26
Sioux Falls, S. Dak.					9			5						14
Smithers, W. Va.					1									1
Smithfield, Ohio.						1								1
South Bend, Ind.					1									1
South Bethlehem, Pa.	1	2	2											5
Southern Junction, Ill.					2									2
Spartanburg, S. C.			1											1
Spencer, Iowa.					5									5
Spokane, Wash.												13		13
Springfield, Ill.		1			3									4
Springfield, Mass.	1	7	3	4										15
Steelton, Pa.		1	7											8
Sterling, Ill.					1									1
Stevens Point, Wis.					1									1
Stony Island, Ill.		1												1
Superior, Wis.					5									5
Syracuse, N. Y.		1	1	7										9
Tacoma, Wash.												1		1
Terre Haute, Ind.					2									2
Toledo, Ohio.			4		10	2								16

Destinations of carlot shipments of eastern grapes from each important producing section—Continued.

Destination.	New York, Ontario shore.	New York-Pennsylvania, Chautauqua-Erie belt.	New York, Central Lakes.	New York, Hudson River.	Michigan.	Ohio.	Kansas.	Iowa.	Arkansas.	Missouri.	Delaware.	Washington.	Others.	Total.
Topeka, Kans	....	....	....	....	9	....	....	1	1	1	....	....	....	12
Tracey, Minn	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Trenton, N. J	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Trinidad, Colo	....	2	....	....	1	....	....	....	....	....	....	....	....	3
Troy, N. Y	....	....	....	1	....	....	....	....	....	....	....	....	....	1
Tulsa, Okla	....	....	....	....	8	....	....	3	....	....	....	....	....	11
Tyrone, Pa	....	1	2	....	....	....	....	....	....	....	....	....	....	3
Underwood, W. Va	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Utica, N. Y	1	2	13	34	....	....	....	....	....	....	....	....	....	50
Valley City, N. Dak	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Voorheesville, N. Y	....	....	....	1	....	....	....	....	....	....	....	....	....	1
Wabash, Ind	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Wahpeton, N. Dak	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Warren, Pa	....	1	....	....	....	1	....	....	....	....	....	....	....	2
Warsaw, Ind	....	....	....	....	2	....	....	....	....	....	....	....	....	2
Washington, D. C	....	4	21	....	....	....	....	....	....	....	....	....	....	25
Waterloo, Iowa	....	....	....	....	7	....	....	1	....	....	....	....	....	8
Waterloo, N. Y	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Watertown, N. Y	....	1	7	2	....	....	....	....	....	....	....	....	....	10
Watertown, Wis	....	....	....	....	5	....	....	....	....	....	....	....	....	5
Watkins, N. Y	....	....	3	1	....	....	....	....	....	....	....	....	....	4
Watuppa, Mass	....	....	....	1	....	....	....	....	....	....	....	....	....	1
Weehawken, N. J	....	....	1	1	....	....	....	....	....	....	....	....	....	2
Wellington, Kans	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Westalton, Mo	....	1	....	....	....	....	....	....	....	....	....	....	....	1
[a]Westfield, N. Y	....	172	....	....	....	....	....	....	....	....	....	....	....	172
Wichita, Kans	....	....	....	....	16	....	....	....	....	....	....	....	....	16
Wick Haven, Pa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Wickliffe, Ohio	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Wilkes-Barre, Pa	....	2	....	....	....	....	....	....	....	....	....	....	....	2
Winner, Kans	....	....	....	....	....	....	1	....	....	....	....	....	....	1
Winona, Minn	....	....	....	....	8	....	....	....	....	....	....	....	....	8
Winona, Ohio	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Winston-Salem, N. C	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Winton, Pa	....	....	1	....	....	....	....	....	....	....	....	....	....	1
Worcester, Mass	....	....	3	3	....	....	....	....	....	....	....	....	....	6
Yakima, Wash	....	....	....	....	....	....	....	....	....	....	....	5	....	5
Yonkers, N. Y	....	....	....	1	....	....	....	....	....	....	....	....	....	1
Yorktown, Ind	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Youngstown, Ohio	....	14	....	....	....	....	....	....	....	....	....	....	....	14
Yukon, Pa	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Zionville, N. C	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Unknown	39	6	28	0	49	5	0	0	0	5	14	1	63	152
Total	66	1,089	694	573	1,637	54	14	68	9	26	39	59	9	4,338

RECAPITULATION OF DESTINATION BY STATES.

Alabama	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Arkansas	....	....	....	....	12	....	....	....	6	2	....	....	....	20
Connecticut	....	3	7	....	....	....	....	....	....	....	....	....	....	10
Colorado	....	9	2	....	29	....	4	....	....	1	....	1	....	46
District of Columbia	....	4	21	....	....	....	....	....	....	....	....	....	....	25
Florida	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Georgia	....	....	1	....	2	....	....	....	....	....	....	....	....	3
Idaho	....	....	....	....	1	....	....	....	....	....	....	1	2	4
Illinois	....	38	3	....	368	....	....	....	....	1	....	....	....	410
Indiana	....	8	2	....	83	1	....	....	....	....	....	....	....	94
Iowa	....	2	....	....	92	....	....	13	....	1	....	....	....	108
Kansas	....	3	....	....	60	....	3	3	1	2	....	....	....	72
Kentucky	....	3	4	....	23	....	....	....	....	....	....	....	....	30
Maine	....	....	7	6	....	....	....	....	....	....	....	....	....	13
Maryland	....	5	21	....	1	....	....	....	....	....	....	....	....	27
Massachusetts	1	101	50	135	1	....	....	....	....	....	....	....	1	289
Michigan	....	17	2	....	141	1	....	....	....	....	....	....	....	161

[a] Includes 3 from Idaho (destination unknown).

Destinations of carlot shipments of eastern grapes from each important producing section—Continued.

RECAPITULATION OF DESTINATION BY STATES—Continued.

Destination.	New York, Ontario shore.	New York-Pennsylvania, Chautauqua-Erie belt.	New York, Central Lakes.	New York, Hudson River.	Michigan.	Ohio.	Kansas.	Iowa.	Arkansas.	Missouri.	Delaware.	Washington.	Others.	Total.
Minnesota	....	.....	2	....	193	....	....	28	....	2	....	1	....	226
Missouri	....	2	2	....	87	....	3	2	....	10	....	.....	....	106
Montana	....	.....	.....	....	2	....	.....	1	.....	.....	....	7	....	10
Nebraska	....	.....	1	....	75	....	4	3	1	2	....	.....	....	86
New Hampshire	....	.....	.....	1	.....	....	.....	.....	.....	.....	....	.....	....	1
New Jersey	....	13	71	4	1	....	.....	.....	.....	.....	....	.....	....	89
New York	6	362	268	418	5	....	.....	.....	.....	.....	....	.....	....	1,059
North Carolina	....	.....	6	....	1	....	.....	.....	.....	.....	....	.....	....	7
North Dakota	....	.....	.....	....	37	....	....	5	....	.....	....	1	....	43
Ohio	....	55	21	....	117	46	....	.....	.....	.....	....	.....	....	239
Oklahoma	....	.....	.....	....	27	....	....	5	1	.....	....	.....	....	33
Oregon	....	.....	.....	....	.....	....	.....	.....	.....	.....	....	....	2	2
Pennsylvania	17	410	134	2	58	1	.....	.....	.....	.....	25	.....	....	647
Rhode Island	....	9	5	6	.....	....	.....	.....	.....	.....	....	.....	....	20
South Carolina	....	.....	9	....	.....	....	.....	.....	.....	.....	....	.....	....	9
South Dakota	....	.....	.....	....	30	....	.....	7	....	.....	....	.....	....	37
Tennessee	....	29	1	....	8	....	.....	.....	.....	.....	....	.....	....	38
Texas	....	.....	.....	....	4	....	.....	.....	.....	.....	....	.....	....	4
Utah	....	.....	.....	....	.....	....	.....	.....	.....	.....	....	1	....	1
Vermont	....	.....	3	1	.....	....	.....	.....	.....	.....	....	.....	....	4
Virginia	....	2	18	....	.....	....	.....	.....	.....	.....	....	.....	....	20
Washington	....	.....	.....	....	.....	....	.....	.....	.....	.....	....	46	....	46
West Virginia	....	6	3	....	19	....	.....	.....	.....	.....	....	.....	....	28
Wisconsin	3	2	2	....	101	....	.....	1	....	.....	....	.....	....	109
Wyoming	....	.....	.....	....	8	....	.....	.....	.....	.....	....	.....	....	8

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